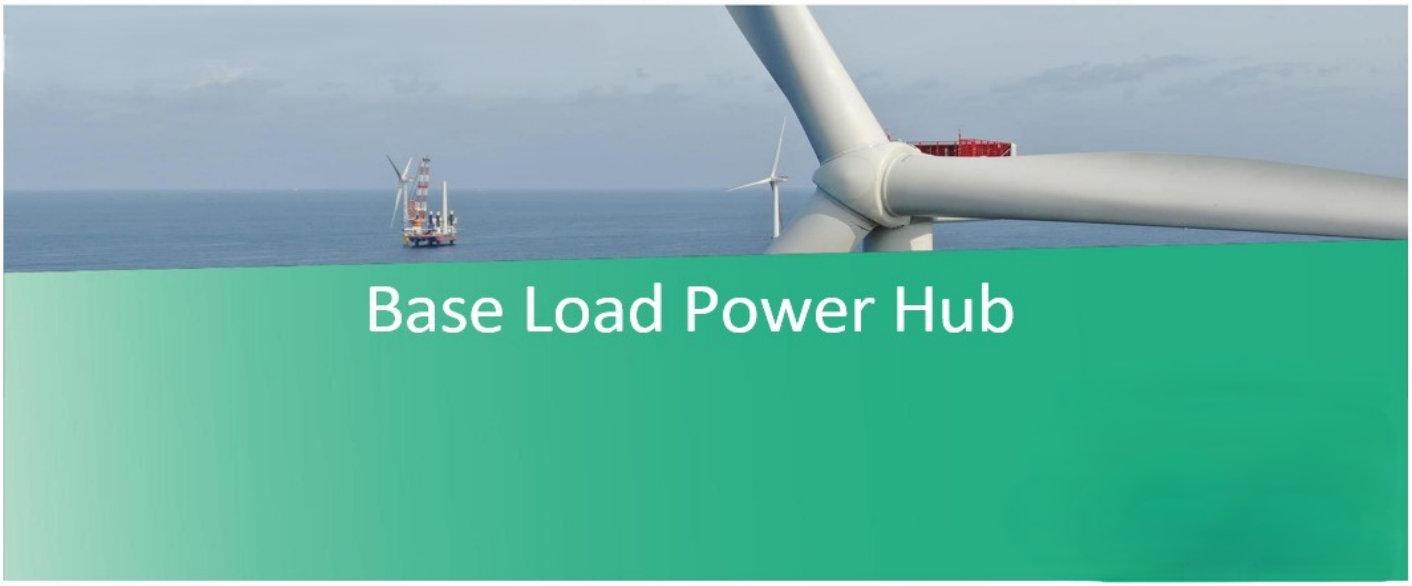
CROSSWIND

ROSETTI MARINO

PROVERLIS

PROJECT **123A90 - HOLLANDSE KUST NOORD WIND PARK**
BLPH Project



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM	25 Hydrogen Storage
SUBSYSTEM	25-05 Hydrogen Storage Vessel E (V-25001E)

CROSSWIND	123A90 - HOLLANDSE KUST NOORD WIND PARK BLPH Project MECHANICAL COMPLETION DOSSIER INDEX	ROSETTI MARINO

Sub System N°:	25-05	Tick as appropriate	ONSHORE	O
Description:	Hydrogen Storage Vessel E (V-25001E)		OFFSHORE	NA

1.	***READY FOR COMMISSIONING CERTIFICATE*** *Ready For Commissioning Certificate (RFC)*	O
2.	***CONSOLIDATED PUNCH LISTS*** *Cleared and Residual Items*	O
3.	***SYSTEM/SUB-SYSTEM LIMIT DRAWINGS*** *Mark-up drawings showing the limits of the relevant System/Sub-System*	O
4.	***MECHANICAL COMPLETION STATUS INDEX – BUILDING DISCIPLINE*** *Building Sub-System Status Index (Print out) and Check/Test sheets*	NA
5.	***MECHANICAL COMPLETION STATUS INDEX – ELECTRICAL DISCIPLINE*** *Electrical Sub-System Status Index (Print out) and Check/Test Sheets* *Hazardous Area Equipment Detailed Inspection*	O
6.	***MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE*** *Instrumental Sub-System Status Index (Print out) and Check/Test Sheets*	O
7.	***MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE*** *Mechanical SubSystem Status Index (Print out) and Check/Test Sheets*	O
8.	***MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE*** *Telecommunication Sub-System Status Index (Print out) and Check/Test Sheets*	NA
9.	***MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE*** *HVAC Sub-System Status Index (Print out) and Check/Test Sheets*	NA
10.	***MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE*** *Piping Sub-System Status Index and Check/Test Sheets*	O
11.	***MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE*** *Safety Sub-System Status Index (Print out) and Check/Test Sheets*	NA
12.	***FAT / VENDOR REPORTS*** *Fat reports issued by vendors and/or vendor reports*	OK
13.	***MECHANICAL COMPLETION CHANGES / MARK-UPS*** *A copy of the changes initiated during the Mechanical Completion process pertaining to the relevant Sub-System will be incorporated in this section*	NA

Note: Under the generic terminology “Building” are also covered the following disciplines: **Structural, Painting**

Under the generic terminology “Instrumental” is also covered the following discipline: **Fire & Gas**

ROSETTI MARINO

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE	●	PARTIAL	

Revision:	2		Issued on:	2025-03-11	
System:	25	/	Hydrogen Storage		
SubSystem:	25-05	/	Hydrogen Storage Vessel E (V-25001E)		

1	COMPANY has, at its option and if required, reviewed the mechanical completion associated with the above-named system/sub-system of the SCOPE and observed that such functional sub-system has been brought into readiness for commencement of the associated pre-commissioning and commissioning activities, but for the outstanding punch list items, if any, attached and referred in this Certificate.
2	Issuance of this Certificate shall not release CONTRACTOR from any of his obligations, responsibilities or liabilities under the CONTRACT.
3	Mechanical Completion Status Index attached (per Discipline) Punch List report attached (Outstanding and Cleared)

PUNCH LIST	PENDING POINTS	
Note: All Category "A" Items must be cleared prior to issue a Ready For Commissioning (RFC) Certificate	A	B
	'0	27

REMARKS:

	CONTRACTOR Construction Manager	**CONTRACTOR** Commissioning Manager	**COMPANY** Construction Lead (if required)	**COMPANY** Commissioning Lead (if required)
Name	Wolmer Borghi	Anthony Iveson	CPY NOT PRESENT	CPY NOT PRESENT
Date	2025-03-11	2025-03-12	2025-03-13	2025-03-13
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2025-03-11T11:22:32.379Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-03-12T13:31:46.295Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-03-13T07:32:55.448Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-03-13T07:33:04.867Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC

Instrumental	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
25-FT-038	Flow Transmitter - Nitrogen to V-25001E Vessel	ONSHORE	C10000921	TJX04	100	2024-12-14	RFC 1
25-PT-011	Pressure Transmitter - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10000928	TJX04	100	2024-10-02	RFC 1
25-PT-046	Pressure Transmitter - Vessel V-25001E Pressure Control	ONSHORE	C10000934	TJX04	100	2024-10-02	RFC 1
25-RO-016	Restriction Orifice - Vessel V-25001E Hydrogen vent system	ONSHORE	C10001213	CJX11	100	2025-02-13	RFC 1
		ONSHORE	C10001441	TJX11	100	2024-12-19	RFC 1
AV-63002/25-FV-038	Pneumatic Connection Air Supply - 25-FV-038	ONSHORE	C10001947	CJX06	100	2025-02-04	RFC 1
AV-63012/25-BDV-016	Pneumatic Connection Air Supply - 25-BDV-016	ONSHORE	C10001983	CJX06	100	2025-02-17	RFC 1
AV-63012/25-PV-046	Pneumatic Connection Air Supply - 25-PV-046	ONSHORE	C10001982	CJX06	100	2025-02-17	RFC 1
C-25-BDV-016/00-JE-22001	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000144	CJX10	100	2025-02-18	RFC 1
C-25-BDY-016/00-JE-23001	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000174	CJX10	100	2025-02-17	RFC 1
C-25-FT-038/00-JE-11003	FLOW TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000034	CJX10	100	2025-01-24	RFC 1
C-25-FY-038/00-JE-11003	E/P POSITIONER / MARSHALLING PCS	ONSHORE	C10000039	CJX10	100	2025-01-25	RFC 1
C-25-PT-011/00-JE-21001	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000134	CJX10	100	2025-02-18	RFC 1
C-25-PT-046/00-JE-11001	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000007	CJX10	100	2025-02-18	RFC 1
C-25-PY-046/00-JE-11001	E/P POSITIONER / MARSHALLING PCS	ONSHORE	C10000013	CJX10	100	2025-02-18	RFC 1
C-25-ZSH-038/00-JE-12005	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000101	CJX10	100	2025-01-25	RFC 1
C-25-ZSH-046/00-JE-12001	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000068	CJX10	100	2025-02-18	RFC 1
C-25-ZSL-038/00-JE-12005	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000100	CJX10	100	2025-01-25	RFC 1
C-25-ZSL-046/00-JE-12001	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000067	CJX10	100	2025-02-18	RFC 1
C-25-ZT-038/00-JE-11003	POSITION TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000047	CJX10	100	2025-01-25	RFC 1
C-25-ZT-046/00-JE-11001	POSITION TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000019	CJX10	100	2025-02-18	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC

Mechanical	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
V-25001E	Hydrogen storage vessel A	ONSHORE	C10002391	CDX01	100	2025-01-30	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC

Piping	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
013-1-J4	Joint 013-1-J4	ONSHORE	C10003859	TMX27	100	2025-01-24	RFC 1
013-1-J5	Joint 013-1-J5	ONSHORE	C10003860	TMX27	100	2025-01-24	RFC 1
053-1-J1	Joint 053-1-J1	ONSHORE	C10003889	TMX27	100	2025-02-12	RFC 1
053-1-J2	Joint 053-1-J2	ONSHORE	C10003890	TMX27	100	2025-02-12	RFC 1
082-1-J1	Joint 082-1-J1	ONSHORE	C10004259	TMX27	100	2025-02-06	RFC 1
082-1-J2	Joint 082-1-J2	ONSHORE	C10004260	TMX27	100	2025-02-06	RFC 1
082-2-J3	Joint 082-2-J3	ONSHORE	C10004261	TMX27	100	2025-02-06	RFC 1
082-2-J4	Joint 082-2-J4	ONSHORE	C10004262	TMX27	100	2025-02-06	RFC 1
083-1-J1	Joint 083-1-J1	ONSHORE	C10003984	TMX27	100	2025-02-13	RFC 1
083-1-J2	Joint 083-1-J2	ONSHORE	C10003985	TMX27	100	2025-02-13	RFC 1
083-1-J3	Joint 083-1-J3	ONSHORE	C10003986	TMX27	100	2025-02-13	RFC 1
084-1-J1	Joint 084-1-J1	ONSHORE	C10003987	TMX27	100	2025-02-13	RFC 1
084-1-J10	Joint 084-1-J10	ONSHORE	C10003996	TMX27	100	2025-02-12	RFC 1
084-1-J11	Joint 084-1-J11	ONSHORE	C10003997	TMX27	100	2025-02-12	RFC 1
084-1-J2	Joint 084-1-J2	ONSHORE	C10003988	TMX27	100	2025-02-13	RFC 1
084-1-J3	Joint 084-1-J3	ONSHORE	C10003989	TMX27	100	2025-02-13	RFC 1
084-1-J4	Joint 084-1-J4	ONSHORE	C10003990	TMX27	100	2025-02-13	RFC 1
084-1-J5	Joint 084-1-J5	ONSHORE	C10003991	TMX27	100	2025-02-13	RFC 1
084-1-J6	Joint 084-1-J6	ONSHORE	C10003992	TMX27	100	2025-02-13	RFC 1
084-1-J7	Joint 084-1-J7	ONSHORE	C10003993	TMX27	100	2025-02-13	RFC 1
084-1-J8	Joint 084-1-J8	ONSHORE	C10003994	TMX27	100	2025-02-13	RFC 1
084-1-J9	Joint 084-1-J9	ONSHORE	C10003995	TMX27	100	2025-02-13	RFC 1
093-1-J6	Joint 093-1-J6	ONSHORE	C10004044	TMX27	100	2025-01-20	RFC 1
093-1-J7	Joint 093-1-J7	ONSHORE	C10004045	TMX27	100	2025-01-21	RFC 1
093-1-J8	Joint 093-1-J8	ONSHORE	C10004046	TMX27	100	2025-01-24	RFC 1
093-1-J9	Joint 093-1-J9	ONSHORE	C10004047	TMX27	100	2025-01-24	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC

Piping	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
25-05-TP-012	Test Pack 25-05-TP-012	ONSHORE	C10003317	CLX02A	100	2024-12-28	RFC 1
		ONSHORE	C10003318	CLX02B	100	2025-01-29	RFC 1
		ONSHORE	C10003319	CXX02	100	2025-02-05	RFC 1
		ONSHORE	C10003320	TMX03	100	2024-12-31	RFC 1
		ONSHORE	C10003321	TMX05	100	2024-12-31	RFC 1
		ONSHORE	C10003324	TPLX05	100	2024-12-31	RFC 1
25-05-TP-018	Test Pack 25-05-TP-018	ONSHORE	C10003365	CLX02A	100	2025-01-16	RFC 1
		ONSHORE	C10003366	CLX02B	100	2025-02-03	RFC 1
		ONSHORE	C10003367	CXX02	100	2025-02-05	RFC 1
		ONSHORE	C10003368	TMX03	100	2025-01-16	RFC 1
		ONSHORE	C10003369	TMX05	100	2025-01-16	RFC 1
		ONSHORE	C10003372	TPLX05	100	2025-01-16	RFC 1
25-05-TP-036	Test Pack 25-05-TP-036	ONSHORE	C10003505	CLX02A	100	2025-01-07	RFC 2
		ONSHORE	C10003506	CLX02B	100	2025-02-12	RFC 2
		ONSHORE	C10003507	CXX02	100	2025-03-06	RFC 2
		ONSHORE	C10003508	TMX03	100	2025-01-07	RFC 2
		ONSHORE	C10003509	TMX05	100	2025-01-08	RFC 2
		ONSHORE	C10003512	TPLX05	100	2025-01-08	RFC 2
25-05-TP-042	Test Pack 25-05-TP-042	ONSHORE	C10003553	CLX02A	100	2025-01-13	RFC 2
		ONSHORE	C10003554	CLX02B	100	2025-02-20	RFC 2
		ONSHORE	C10003555	CXX02	100	2025-03-06	RFC 2
		ONSHORE	C10003556	TMX03	100	2025-01-14	RFC 2
		ONSHORE	C10003557	TMX05	100	2025-01-14	RFC 2
		ONSHORE	C10003560	TPLX05	100	2025-01-16	RFC 2

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC

Piping	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
25-05-TP-056	Test Pack 25-05-TP-056	ONSHORE	C10003645	CLX02A	100	2024-12-02	RFC 1
		ONSHORE	C10003646	CLX02B	100	2025-02-07	RFC 1
		ONSHORE	C10003647	CXX02	100	2025-02-11	RFC 1
		ONSHORE	C10003648	TMX03	100	2024-12-06	RFC 1
		ONSHORE	C10003649	TMX05	100	2024-12-06	RFC 1
		ONSHORE	C10003652	TPLX05	100	2024-12-06	RFC 1
TP-006	H2 Inlet System and Storage Vessel V-25001E	ONSHORE	C10004893	TMX25	100	2025-02-26	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC

ATEX	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
25-BDV-016	On/Off Valve - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001564	CJX01	100	2025-02-17	RFC 1
25-BDY-016	Solenoid Valve - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001571	CJX01	100	2025-02-18	RFC 1
25-FT-038	Flow Transmitter - Nitrogen to V-25001E Vessel	ONSHORE	C10001481	CJX01	100	2025-01-24	RFC 1
25-FV-038	Control Valve - Nitrogen to V-25001E Vessel	ONSHORE	C10001579	CJX01	100	2025-01-28	RFC 1
25-FY-038	Electropositioner - Nitrogen to V-25001E Vessel	ONSHORE	C10001703	CJX01	100	2025-01-25	RFC 1
25-PCV-016	Air Set Filter - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001614	CJX01	100	2025-02-17	RFC 1
25-PG-016	Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10004809	CJX01	100	2025-02-17	RFC 1
25-PG-038	Air Set Pressure Gauge Filter	ONSHORE	C10004741	CJX01	100	2025-01-30	RFC 1
25-PG-046	Air Set Pressure Gauge Filter	ONSHORE	C10004746	CJX01	100	2025-02-17	RFC 1
25-PSV-001E	Pressure Safety Valve - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001162	CJX01	100	2025-02-13	RFC 1
25-PSV-016	Safety Valve - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10004816	CJX01	100	2025-02-17	RFC 1
25-PSV-038	Safety Valve	ONSHORE	C10004755	CJX01	100	2025-01-28	RFC 1
25-PSV-046	Safety Valve	ONSHORE	C10004760	CJX01	100	2025-02-17	RFC 1
25-PT-011	Pressure Transmitter - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001488	CJX01	100	2025-02-18	RFC 1
25-PT-046	Pressure Transmitter - Vessel V-25001E Pressure Control	ONSHORE	C10001494	CJX01	100	2025-02-18	RFC 1
25-PV-046	Control Valve - Vessel V-25001E Pressure Control	ONSHORE	C10001584	CJX01	100	2025-02-18	RFC 1
25-PY-046	Electropositioner - Vessel V-25001E Pressure Control	ONSHORE	C10001708	CJX01	100	2025-02-18	RFC 1
25-SV-038	Air Set Filter	ONSHORE	C10004727	CJX01	100	2025-01-30	RFC 1
25-SV-046	Air Set Filter	ONSHORE	C10004732	CJX01	100	2025-02-17	RFC 1
25-ZSHL-016	Limit Switch Box - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001607	CJX01	100	2025-02-18	RFC 1
25-ZSHL-038	Open/closed Limit Switches - Nitrogen to V-25001E Vessel	ONSHORE	C10001747	CJX01	100	2025-01-27	RFC 1
25-ZSHL-046	Open/closed Limit Switches - Vessel V-25001E Pressure Control	ONSHORE	C10001750	CJX01	100	2025-02-18	RFC 1

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003212	A	25-ZSHL-038 C10001747	The enclosure gasket is damage. To be replace	.		APolo 2025-01-27	2025-01-31	APolo 2025-01-31	2025-01-31
C30003191	B	25-FT-038 C10001481	Documentation: document 123A90-DDL-EL-LIS-20094 does not report what was installed in the field	.		APolo 2025-01-24			
C30003192	B	25-FT-038 C10001481	The plug is not installed according to the specifications. To be replaced with plug Ex-d/e IIC , (see 123A90-DDL-IN-HD-40079_Rev.02 sh.	.		APolo 2025-01-24	2025-03-08	Gtangianu 2025-03-08	2025-03-08
C30003210	B	25-FY-038 C10001703	On ATEX register (123A90-DDL-LIS-20094) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.	.		APolo 2025-01-25			
C30003260	B	25-PSV-038 C10004755	On ATEX register (123A90-DDL-EL-LIS-20094 sheet 6) SN is 24-03795 but actual is 24-03803	.		Lmussi 2025-01-28			
C30003350	B	25-PG-038 C10004741	On ATEX register equipment model is MBS6P4S2PN07-ATEX while actual is MBS6P4S2PN6S-ATEX	.		Lmussi 2025-01-30			
C30003351	B	25-PG-038 C10004741	Equipment ATEX label is missing	.		Lmussi 2025-01-30	2025-02-03	Lmussi 2025-02-03	2025-02-03
C30003800	B	25-PSV-001E C10001162	Scratches on painting, general touch-up to be performed	.		Lmussi 2025-02-13			
C30003856	B	25-PG-016 C10004809	On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing	.		Lmussi 2025-02-17			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage
SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003857	B	25-PSV-016 C10004816	Equipment ATEX identification label is missing	.		Lmussi 2025-02-17			
C30003858	B	25-PSV-016 C10004816	ATEX Declaration of Conformity by Manufacturer is missing	.		Lmussi 2025-02-17			
C30003859	B	25-PSV-016 C10004816	On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing	.		Lmussi 2025-02-17			
C30003861	B	25-PG-046 C10004746	On ATEX register (123A90-DDL-EL-LIS-20094) equipment model is MBS6P4S2PN07-ATEX while actual is MBS6P4S2PN6S-ATEX	.		Lmussi 2025-02-17			
C30003862	B	25-PSV-046 C10004760	On ATEX register (123A90-DDL-EL-LIS-20094 sheet 6) equipment SN is 24-03800 but actual is 24-03797	.		Lmussi 2025-02-17			
C30003896	B	25-PCV-016 C10001614	On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing	.		Lmussi 2025-02-17			
C30003922	B	25-BDV-016 C10001564	Scratches on painting, general touch-up to be performed	.		Lmussi 2025-02-17			
C30003923	B	25-BDV-016 C10001564	On ATEX register (123A90-DDL-LIS-20094 sheet 8) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.	.		Lmussi 2025-02-17			
C30003983	B	25-PT-046 C10001494	Missing tag SS , on the instrument.	.		APolo 2025-02-18	2025-03-01	JKrizanic 2025-03-01	2025-03-01

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003989	B	25-PT-011 C10001488	Missing tag SS , on the instrument.	.		APolo 2025-02-18	2025-03-01	JKrizanic 2025-03-01	2025-03-01
C30003990	B	25-PY-046 C10001708	missing SS tag	.		AAndreani 2025-02-18	2025-03-03	JKrizanic 2025-03-03	2025-03-03
C30003991	B	25-PY-046 C10001708	On ATEX register (123A90-DDL-LIS-20094 sheet 7) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.	.		AAndreani 2025-02-18			
C30003992	B	25-PV-046 C10001584	Scratches on painting, general touch-up to be performed	.		Lmussi 2025-02-18			
C30003994	B	25-ZSHL-046 C10001750	missing SS tag	.		AAndreani 2025-02-18	2025-03-03	JKrizanic 2025-03-03	2025-03-03
C30003997	B	25-BDY-016 C10001571	On ATEX register (123A90-DDL-LIS-20094 sheet 8) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.	.		AAndreani 2025-02-18			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage
SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003241	A	V-25001E C10002391	The vessel has not been positioned as for layout document 123A90-DDL-IN-DL-40081 but has been positioned in place of the vessel B.	.		MBiaggioni 2025-01-28	2025-02-12	KAlbonetti 2025-02-12	2025-02-12
C30003364	A	V-25001E C10002391	Earthing lug not connected.	.		KAlbonetti 2025-01-30	2025-02-18	KAlbonetti 2025-02-18	2025-02-18
C30003248	B	V-25001E C10002391	Internal inspection of Vessel has not been performed. Manway shall be opened to carry out internal inspection.	.	Manways have been opened and the vessel has been cleaned inside.	MBiaggioni 2025-01-28	KAlbonetti 2025-02-12	KAlbonetti 2025-02-12	JDuinhoven 2025-02-12
C30003359	B	V-25001E C10002391	Bolts and nuts of manholes are rusted.	.		MBiaggioni 2025-01-30	2025-02-25	KAlbonetti 2025-02-25	2025-02-25
C30003374	B	V-25001E C10002391	Painting touch-ups to be made after installation.	.		KAlbonetti 2025-01-30			
C30003391	B	V-25001E C10002391	There is an unacceptable gap between saddle and basement. Not fixed to the structure.	.		KAlbonetti 2025-01-30	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30003401	B	V-25001E C10002391	Access platform to the vessel not installed.	.		KAlbonetti 2025-01-30			

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage
SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003285	A	25-05-TP-012 C10003318	MIssing earthing connection on earthing plate (Vessel V -25001E side)	MIssing earthing connection on earthing plate (Vessel V -25001E side)		AMancini 2025-01-29	2025-02-14	Lmussi 2025-02-14	2025-02-14
C30003428	A	25-05-TP-018 C10003366	Missing earthing connection on earthing plate	.		AMancini 2025-01-31	2025-02-12	Ecarotenuto 2025-02-12	2025-02-12
C30003446	A	25-05-TP-042 C10003560	The spools have not been properly cleaned inside and in some there are debris and/or rust points.	.		KAlbonetti 2025-01-31	2025-02-12	KAlbonetti 2025-02-12	2025-02-12
C30003772	A	25-05-TP-036 C10003506	Earthing lug not connected to earth.	.		LNovaga 2025-02-12	2025-02-15	Lmussi 2025-02-15	2025-02-15
C30004058	A	25-05-TP-042 C10003555	Earthing plate totally painted.	.		LNovaga 2025-02-20	2025-02-26	LNovaga 2025-02-26	2025-02-26
C30004060	A	25-05-TP-042 C10003554	Earthing lug not connected to earth.	.		LNovaga 2025-02-20	2025-02-26	2025-02-26	2025-02-26
C30002199	B	25-05-TP-012 C10003317	Sk.013 (Sh.1/1): Support PS-02016.2: position R1 has not been assembled yet.	.		KAlbonetti 2024-12-28	2025-01-30	AMancini 2025-01-30	2025-01-30
C30002418	B	25-05-TP-036 C10003505	Spool has not been installed in erection. Inspection points from 4 to 5 of ITR "Inspection before test" to be checked during reinstatement.	.		LNovaga 2025-01-07	2025-02-14	LNovaga 2025-02-14	2025-02-14
C30002670	B	25-05-TP-042 C10003553	For all piping supports the materials for the S-211, S-212 and C-16 standards have not yet been installed.	.		KAlbonetti 2025-01-10	2025-02-20	LNovaga 2025-02-20	2025-02-20

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002674	B	25-05-TP-042 C10003553	Spool has not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the after test phase.	.		KAlbonetti 2025-01-10	2025-02-19	KAlbonetti 2025-02-19	2025-02-19
C30002678	B	25-05-TP-042 C10003553	Valves installation to be checked after test.	.		KAlbonetti 2025-01-10	2025-02-19	KAlbonetti 2025-02-19	2025-02-19
C30002897	B	25-05-TP-018 C10003365	SK.093; PS-02017.1/.2/.3/.4: Positions R1, R2 and R3 have not been assembled.	.		KAlbonetti 2025-01-16	2025-02-03	AMancini 2025-02-03	2025-02-03
C30002906	B	25-05-TP-018 C10003365	Spools have not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the reinstatement phase.	.		KAlbonetti 2025-01-16	2025-02-03	AMancini 2025-02-03	2025-02-03
C30003430	B	25-05-TP-018 C10003366	Isolation rubber on Support PS-02017.1 is damaged	.		AMancini 2025-01-31	2025-02-07	LNovaga 2025-02-07	2025-02-07
C30003432	B	25-05-TP-018 C10003366	Missing PTFE isolation pad on support PS-02017.4	.		AMancini 2025-01-31	2025-02-07	LNovaga 2025-02-07	2025-02-07
C30003533	B	25-05-TP-012 C10003319	Color coding and fluid direction are missing.	.		KAlbonetti 2025-02-05			
C30003538	B	25-05-TP-012 C10003319	General touch up do to, especially near the supports of the piping line.	.		KAlbonetti 2025-02-05	2025-02-06	KAlbonetti 2025-02-06	2025-02-06
C30003544	B	25-05-TP-018 C10003367	Color coding and fluid direction are missing.	.		KAlbonetti 2025-02-05			

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003548	B	25-05-TP-018 C10003367	General touch up do to, especially near the supports of the piping line.	.		KAlbonetti 2025-02-05	2025-02-06	KAlbonetti 2025-02-06	2025-02-06
C30003645	B	25-05-TP-056 C10003647	Color coding and fluid direction are missing.	.		KAlbonetti 2025-02-11			
C30003738	B	25-05-TP-018 C10003366	Missing PTFE isolation pad on support PS-02017.4	.		LNovaga 2025-02-12	2025-02-14	LNovaga 2025-02-14	2025-02-14
C30003740	B	25-05-TP-018 C10003366	Isolation rubber on Support PS-02017.1 (S-211) is damaged	.		LNovaga 2025-02-12	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30003741	B	25-05-TP-018 C10003367	Spool F needs touch up	.		LNovaga 2025-02-12			
C30003742	B	25-05-TP-018 C10003367	Touch up under the plastic ties	.		LNovaga 2025-02-12			
C30004055	B	25-05-TP-042 C10003555	Color coding and fluid direction are missing.	.		LNovaga 2025-02-20	2025-02-27	KAlbonetti 2025-02-27	2025-02-27
C30004203	B	25-05-TP-042 C10003555	Color coding and fluid direction are missing.	.		LNovaga 2025-03-06			
C30004204	B	25-05-TP-036 C10003507	Color coding and fluid direction are missing.	.		LNovaga 2025-03-06			

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage
SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003193	B	C-25-FT-038/00-JE-11003 C10000034	Missing cores identification tag. side JB 00-JE-11003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-01-24	2025-02-12	APolo 2025-02-12	2025-02-12
C30003938	B	AV-63012/25-BDV-016 C10001983	Missing support on the tubing side the 25-BDV-016 . See attached photo.	.		Gtangianu 2025-02-17	2025-02-24	AAndreani 2025-02-24	2025-02-24
C30003940	B	AV-63012/25-BDV-016 C10001983	Missing SS tag both side the tubing.	.		Gtangianu 2025-02-17	2025-02-20	AAndreani 2025-02-20	2025-02-20
C30003942	B	AV-63012/25-PV-046 C10001982	Missing SS tag both side the tubing.	.		Gtangianu 2025-02-17	2025-02-20	AAndreani 2025-02-20	2025-02-20
C30003948	B	C-25-BDY-016/00-JE-23001 C10000174	the cable installed is temporary. To be replaced	.		AAndreani 2025-02-17			

Section 2 CONSOLIDATED PUNCH LISTS

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003212	A	25-ZSHL-038 C10001747	The enclosure gasket is damage. To be replace	.		APolo 2025-01-27	2025-01-31	APolo 2025-01-31	2025-01-31
C30003191	B	25-FT-038 C10001481	Documentation: document 123A90-DDL-EL-LIS-20094 does not report what was installed in the field	.		APolo 2025-01-24			
C30003192	B	25-FT-038 C10001481	The plug is not installed according to the specifications. To be replaced with plug Ex-d/e IIC , (see 123A90-DDL-IN-HD-40079_Rev.02 sh.	.		APolo 2025-01-24	2025-03-08	Gtangianu 2025-03-08	2025-03-08
C30003210	B	25-FY-038 C10001703	On ATEX register (123A90-DDL-LIS-20094) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.	.		APolo 2025-01-25			
C30003260	B	25-PSV-038 C10004755	On ATEX register (123A90-DDL-EL-LIS-20094 sheet 6) SN is 24-03795 but actual is 24-03803	.		Lmussi 2025-01-28	2025-04-17	Gtangianu 2025-04-17	2025-04-17
C30003350	B	25-PG-038 C10004741	On ATEX register equipment model is MBS6P4S2PN07-ATEX while actual is MBS6P4S2PN6S-ATEX	.		Lmussi 2025-01-30	2025-04-17	Gtangianu 2025-04-17	2025-04-17
C30003351	B	25-PG-038 C10004741	Equipment ATEX label is missing	.		Lmussi 2025-01-30	2025-02-03	Lmussi 2025-02-03	2025-02-03
C30003800	B	25-PSV-001E C10001162	Scratches on painting, general touch-up to be performed	.		Lmussi 2025-02-13	2025-04-11	LNovaga 2025-04-11	2025-04-11
C30003856	B	25-PG-016 C10004809	On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing	.		Lmussi 2025-02-17			

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SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003857	B	25-PSV-016 C10004816	Equipment ATEX identification label is missing	.		Lmussi 2025-02-17	2025-04-24	Gtangianu 2025-04-24	2025-04-24
C30003858	B	25-PSV-016 C10004816	ATEX Declaration of Conformity by Manufacturer is missing	.		Lmussi 2025-02-17	2025-04-24	Gtangianu 2025-04-24	2025-04-24
C30003859	B	25-PSV-016 C10004816	On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing	.		Lmussi 2025-02-17			
C30003861	B	25-PG-046 C10004746	On ATEX register (123A90-DDL-EL-LIS-20094) equipment model is MBS6P4S2PN07-ATEX while actual is MBS6P4S2PN6S-ATEX	.		Lmussi 2025-02-17	2025-04-17	Gtangianu 2025-04-17	2025-04-17
C30003862	B	25-PSV-046 C10004760	On ATEX register (123A90-DDL-EL-LIS-20094 sheet 6) equipment SN is 24-03800 but actual is 24-03797	.		Lmussi 2025-02-17	2025-04-17	Gtangianu 2025-04-17	2025-04-17
C30003896	B	25-PCV-016 C10001614	On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing	.		Lmussi 2025-02-17			
C30003922	B	25-BDV-016 C10001564	Scratches on painting, general touch-up to be performed	.		Lmussi 2025-02-17	2025-04-08	LNovaga 2025-04-08	2025-04-08
C30003923	B	25-BDV-016 C10001564	On ATEX register (123A90-DDL-LIS-20094 sheet 8) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.	.		Lmussi 2025-02-17			
C30003983	B	25-PT-046 C10001494	Missing tag SS , on the instrument.	.		APolo 2025-02-18	2025-03-01	JKrizanic 2025-03-01	2025-03-01

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SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003989	B	25-PT-011 C10001488	Missing tag SS , on the instrument.	.		APolo 2025-02-18	2025-03-01	JKrizanic 2025-03-01	2025-03-01
C30003990	B	25-PY-046 C10001708	missing SS tag	.		AAndreani 2025-02-18	2025-03-03	JKrizanic 2025-03-03	2025-03-03
C30003991	B	25-PY-046 C10001708	On ATEX register (123A90-DDL-LIS-20094 sheet 7) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.	.		AAndreani 2025-02-18			
C30003992	B	25-PV-046 C10001584	Scratches on painting, general touch-up to be performed	.		Lmussi 2025-02-18	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30003994	B	25-ZSHL-046 C10001750	missing SS tag	.		AAndreani 2025-02-18	2025-03-03	JKrizanic 2025-03-03	2025-03-03
C30003997	B	25-BDY-016 C10001571	On ATEX register (123A90-DDL-LIS-20094 sheet 8) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.	.		AAndreani 2025-02-18			

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003241	A	V-25001E C10002391	The vessel has not been positioned as for layout document 123A90-DDL-IN-DL-40081 but has been positioned in place of the vessel B.	.		MBiaggioni 2025-01-28	2025-02-12	KAlbonetti 2025-02-12	2025-02-12
C30003364	A	V-25001E C10002391	Earthing lug not connected.	.		KAlbonetti 2025-01-30	2025-02-18	KAlbonetti 2025-02-18	2025-02-18
C30003248	B	V-25001E C10002391	Internal inspection of Vessel has not been performed. Manway shall be opened to carry out internal inspection.	.	Manways have been opened and the vessel has been cleaned inside.	MBiaggioni 2025-01-28	KAlbonetti 2025-02-12	KAlbonetti 2025-02-12	JDuinhoven 2025-02-12
C30003359	B	V-25001E C10002391	Bolts and nuts of manholes are rusted.	.		MBiaggioni 2025-01-30	2025-02-25	KAlbonetti 2025-02-25	2025-02-25
C30003374	B	V-25001E C10002391	Painting touch-ups to be made after installation.	.		KAlbonetti 2025-01-30	2025-04-11	LNovaga 2025-04-11	2025-04-11
C30003391	B	V-25001E C10002391	There is an unacceptable gap between saddle and basement. Not fixed to the structure.	.		KAlbonetti 2025-01-30	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30003401	B	V-25001E C10002391	Access platform to the vessel not installed.	.		KAlbonetti 2025-01-30	2025-04-23	LNovaga 2025-04-23	2025-04-23

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003285	A	25-05-TP-012 C10003318	MIssing earthing connection on earthing plate (Vessel V -25001E side)	MIssing earthing connection on earthing plate (Vessel V -25001E side)		AMancini 2025-01-29	2025-02-14	Lmussi 2025-02-14	2025-02-14
C30003428	A	25-05-TP-018 C10003366	Missing earthing connection on earthing plate	.		AMancini 2025-01-31	2025-02-12	Ecarotenuto 2025-02-12	2025-02-12
C30003446	A	25-05-TP-042 C10003560	The spools have not been properly cleaned inside and in some there are debris and/or rust points.	.		KAlbonetti 2025-01-31	2025-02-12	KAlbonetti 2025-02-12	2025-02-12
C30003772	A	25-05-TP-036 C10003506	Earthing lug not connected to earth.	.		LNovaga 2025-02-12	2025-02-15	Lmussi 2025-02-15	2025-02-15
C30004058	A	25-05-TP-042 C10003555	Earthing plate totally painted.	.		LNovaga 2025-02-20	2025-02-26	LNovaga 2025-02-26	2025-02-26
C30004060	A	25-05-TP-042 C10003554	Earthing lug not connected to earth.	.		LNovaga 2025-02-20	2025-02-26	2025-02-26	2025-02-26
C30002199	B	25-05-TP-012 C10003317	Sk.013 (Sh.1/1): Support PS-02016.2: position R1 has not been assembled yet.	.		KAlbonetti 2024-12-28	2025-01-30	AMancini 2025-01-30	2025-01-30
C30002418	B	25-05-TP-036 C10003505	Spool has not been installed in erection. Inspection points from 4 to 5 of ITR "Inspection before test" to be checked during reinstatement.	.		LNovaga 2025-01-07	2025-02-14	LNovaga 2025-02-14	2025-02-14
C30002670	B	25-05-TP-042 C10003553	For all piping supports the materials for the S-211, S-212 and C-16 standards have not yet been installed.	.		KAlbonetti 2025-01-10	2025-02-20	LNovaga 2025-02-20	2025-02-20

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002674	B	25-05-TP-042 C10003553	Spool has not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the after test phase.	.		KAlbonetti 2025-01-10	2025-02-19	KAlbonetti 2025-02-19	2025-02-19
C30002678	B	25-05-TP-042 C10003553	Valves installation to be checked after test.	.		KAlbonetti 2025-01-10	2025-02-19	KAlbonetti 2025-02-19	2025-02-19
C30002897	B	25-05-TP-018 C10003365	SK.093; PS-02017.1/.2/.3/.4: Positions R1, R2 and R3 have not been assembled.	.		KAlbonetti 2025-01-16	2025-02-03	AMancini 2025-02-03	2025-02-03
C30002906	B	25-05-TP-018 C10003365	Spools have not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the reinstatement phase.	.		KAlbonetti 2025-01-16	2025-02-03	AMancini 2025-02-03	2025-02-03
C30003430	B	25-05-TP-018 C10003366	Isolation rubber on Support PS-02017.1 is damaged	.		AMancini 2025-01-31	2025-02-07	LNovaga 2025-02-07	2025-02-07
C30003432	B	25-05-TP-018 C10003366	Missing PTFE isolation pad on support PS-02017.4	.		AMancini 2025-01-31	2025-02-07	LNovaga 2025-02-07	2025-02-07
C30003533	B	25-05-TP-012 C10003319	Color coding and fluid direction are missing.	.		KAlbonetti 2025-02-05	2025-03-21	LNovaga 2025-03-21	2025-03-21
C30003538	B	25-05-TP-012 C10003319	General touch up do to, especially near the supports of the piping line.	.		KAlbonetti 2025-02-05	2025-02-06	KAlbonetti 2025-02-06	2025-02-06
C30003544	B	25-05-TP-018 C10003367	Color coding and fluid direction are missing.	.		KAlbonetti 2025-02-05	2025-03-21	LNovaga 2025-03-21	2025-03-21

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003548	B	25-05-TP-018 C10003367	General touch up do to, especially near the supports of the piping line.	.		KAlbonetti 2025-02-05	2025-02-06	KAlbonetti 2025-02-06	2025-02-06
C30003645	B	25-05-TP-056 C10003647	Color coding and fluid direction are missing.	.		KAlbonetti 2025-02-11	2025-03-20	LNovaga 2025-03-20	2025-03-20
C30003738	B	25-05-TP-018 C10003366	Missing PTFE isolation pad on support PS-02017.4	.		LNovaga 2025-02-12	2025-02-14	LNovaga 2025-02-14	2025-02-14
C30003740	B	25-05-TP-018 C10003366	Isolation rubber on Support PS-02017.1 (S-211) is damaged	.		LNovaga 2025-02-12	2025-03-03	LNovaga 2025-03-03	2025-03-03
C30003741	B	25-05-TP-018 C10003367	Spool F needs touch up	.		LNovaga 2025-02-12	2025-03-20	LNovaga 2025-03-20	2025-03-20
C30003742	B	25-05-TP-018 C10003367	Touch up under the plastic ties	.		LNovaga 2025-02-12	2025-03-20	LNovaga 2025-03-20	2025-03-20
C30004055	B	25-05-TP-042 C10003555	Color coding and fluid direction are missing.	.		LNovaga 2025-02-20	2025-02-27	KAlbonetti 2025-02-27	2025-02-27
C30004203	B	25-05-TP-042 C10003555	Color coding and fluid direction are missing.	.		LNovaga 2025-03-06	2025-03-20	LNovaga 2025-03-20	2025-03-20
C30004204	B	25-05-TP-036 C10003507	Color coding and fluid direction are missing.	.		LNovaga 2025-03-06	2025-03-20	LNovaga 2025-03-20	2025-03-20

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PUNCH LIST REPORT

SYSTEM 25 Hydrogen Storage

SUBSYSTEM 25-05 Hydrogen Storage Vessel E (V-25001E)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003193	B	C-25-FT-038/00-JE-11003 C10000034	Missing cores identification tag. side JB 00-JE-11003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-01-24	2025-02-12	APolo 2025-02-12	2025-02-12
C30003938	B	AV-63012/25-BDV-016 C10001983	Missing support on the tubing side the 25-BDV-016 . See attached photo.	.		Gtangianu 2025-02-17	2025-02-24	AAndreani 2025-02-24	2025-02-24
C30003940	B	AV-63012/25-BDV-016 C10001983	Missing SS tag both side the tubing.	.		Gtangianu 2025-02-17	2025-02-20	AAndreani 2025-02-20	2025-02-20
C30003942	B	AV-63012/25-PV-046 C10001982	Missing SS tag both side the tubing.	.		Gtangianu 2025-02-17	2025-02-20	AAndreani 2025-02-20	2025-02-20
C30003948	B	C-25-BDY-016/00-JE-23001 C10000174	the cable installed is temporary. To be replaced	.		AAndreani 2025-02-17	2025-04-08	Gtangianu 2025-04-08	2025-04-08

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003191

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001481	1.4 Discipline	ATEX
1.2 Item	25-FT-038	Flow Transmitter - Nitrogen to V-25001E Vessel	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Documentation: document 123A90-DDL-EL-LIS-20094 does not report what was installed in the field

Name: Alessio Polo

Date: 2025-01-24

Signature: Digitaly signed by Alessio Polo 2025-01-24T16:38:18.322Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-24
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Alessio Polo 2025-01-24T16:38:27.044Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature


BROOKS INSTRUMENT Hatfield PA U.S.A.
-40°C <=Tamb <= 70°C, NEC Class 2 Supplies Only 30 Volts max., 4-20 mA,
Keep Cover Tight When In Operation. A SEAL SHALL BE INSTALLED WITHIN 50mm of the enclosure.
CAUTION: Unauthorized Adjustment May Cause Faulty Operation.
ATTENTION: Un montage incorrect peut entrainer un dysfonctionnement.
Indicator Part No. 273H407AAA Serial No. 06C43100315
Year 2024

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003210

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001703	1.4 Discipline	ATEX
1.2 Item	25-FY-038		Electropositioner - Nitrogen to V-25001E Vessel
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

On ATEX register (123A90-DDL-LIS-20094) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.

Name: Alessio Polo

Date: 2025-01-25

Signature: Digitaly signed by Alessio Polo 2025-01-25T12:32:08.276Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-25
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Alessio Polo 2025-01-25T12:32:17.627Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

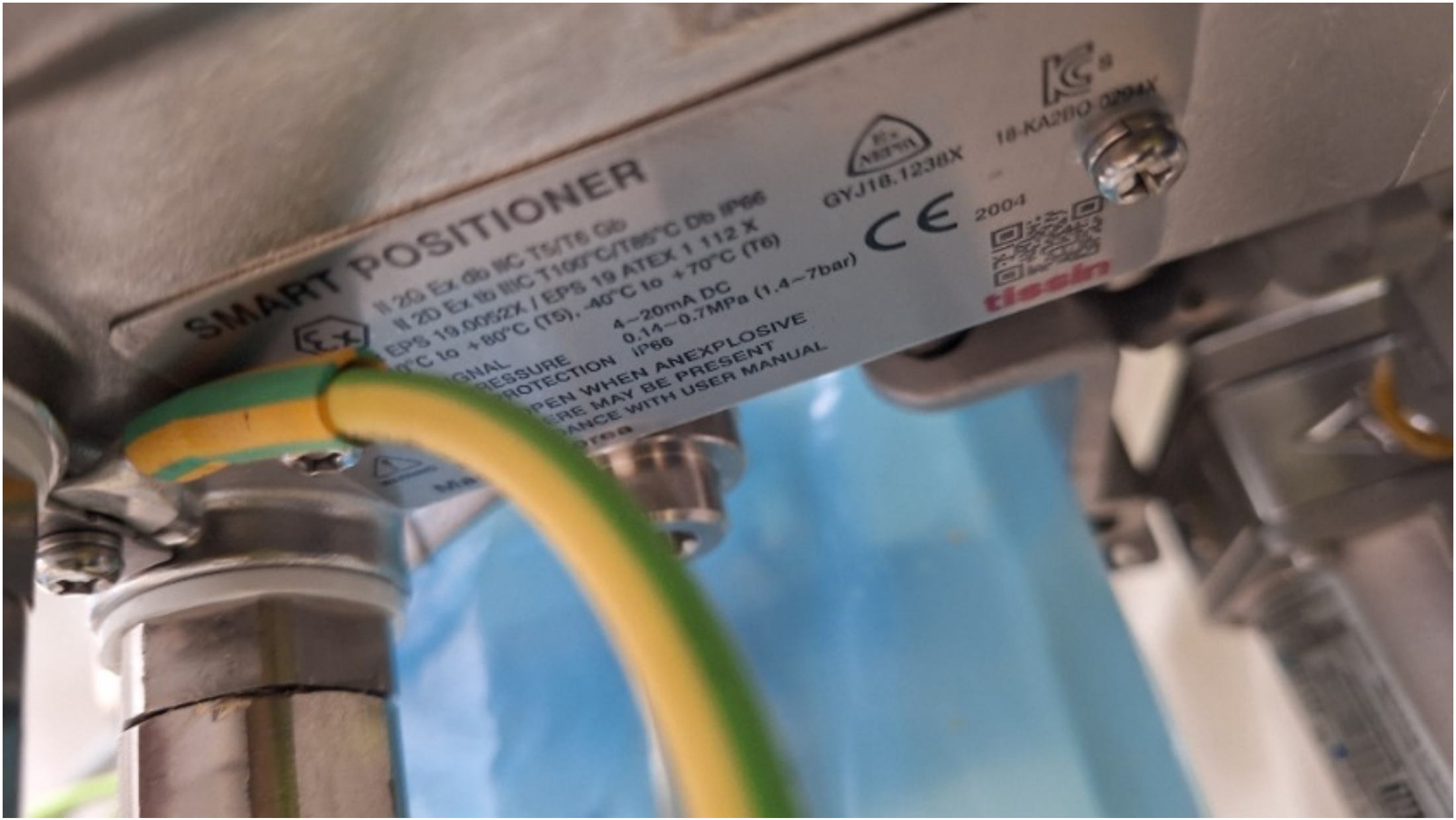
Signature

6- CLEARANCE APPROVAL

Name

Date

Signature


SMART POSITIONER
II 2G Ex db IIC T5/T6 Gb
II 2D Ex tb IIIC T100°C/T85°C Db IP66
EPS 19.0052X / EPS 19 ATEX 1 112 X
-40°C to +80°C (T5), -40°C to +70°C (T6)
4~20mA DC
0.14~0.7MPa (1.4~7bar)
IP66
GYJ18.1238X
2004
tiesin

SMART POSITIONER
Model No.
TS905L-C41530
Serial No.
24050890
Operating Temp.
-30°C~+80°C
tiesin
www.tiesin.co.kr
Imported by LGM ENGINEERING srl -Italy-

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003856

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004809	1.4 Discipline	ATEX
1.2 Item	25-PG-016		Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T10:46:35.217Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Luca Mussi 2025-02-17T10:46:48.164Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003859

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004816	1.4 Discipline	ATEX
1.2 Item	25-PSV-016	Safety Valve - Vessel V-25001E Hydrogen Vent System	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T10:52:15.399Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Luca Mussi 2025-02-17T10:52:45.706Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003896

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001614	1.4 Discipline	ATEX
1.2 Item	25-PCV-016		Air Set Filter - Vessel V-25001E Hydrogen Vent System
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

On ATEX register (123A90-DDL-EL-LIS-20094) equipment is missing

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T14:36:59.363Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Luca Mussi 2025-02-17T14:37:22.360Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003923

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001564	1.4 Discipline	ATEX
1.2 Item	25-BDV-016		On/Off Valve - Vessel V-25001E Hydrogen Vent System
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

On ATEX register (123A90-DDL-LIS-20094 sheet 8) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T16:11:49.190Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Luca Mussi 2025-02-17T16:11:58.618Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003991

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001708	1.4 Discipline	ATEX
1.2 Item	25-PY-046		Electropositioner - Vessel V-25001E Pressure Control
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

On ATEX register (123A90-DDL-LIS-20094 sheet 7) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.

Name: Andrea Andreani

Date: 2025-02-18

Signature: Digitaly signed by Andrea Andreani 2025-02-18T15:36:44.347Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Andreani
3.4 Activity code	MC Mechanical Completion	Date	2025-02-18
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Andrea Andreani 2025-02-18T15:36:55.000Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003997

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001571	1.4 Discipline	ATEX
1.2 Item	25-BDY-016	Solenoid Valve - Vessel V-25001E Hydrogen Vent System	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

On ATEX register (123A90-DDL-LIS-20094 sheet 8) Manufacturer, Atex certificate, SN, Atex marking etc. are missing or wrong.

Name: Andrea Andreani

Date: 2025-02-18

Signature: Digitaly signed by Andrea Andreani 2025-02-18T16:12:42.342Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Andreani
3.4 Activity code	MC Mechanical Completion	Date	2025-02-18
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Andrea Andreani 2025-02-18T16:12:58.507Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002199

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003317	1.4 Discipline	Piping
1.2 Item	25-05-TP-012	Test Pack 25-05-TP-012	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Sk.013 (Sh.1/1): Support PS-02016.2: position R1 has not been assembled yet.

Name: Kangi Albonetti

Date: 2024-12-28

Signature: Digitaly signed by Kangi Albonetti 2024-12-28T12:04:13.465Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2024-12-28
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2024-12-28T12:04:24.385Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Mancini

Date: 2025-01-30

Signature: Digitaly signed by Andrea Mancini 2025-01-30T08:25:13.577Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002418

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003505	1.4 Discipline	Piping
1.2 Item	25-05-TP-036	Test Pack 25-05-TP-036	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Spool has not been installed in erection. Inspection points from 4 to 5 of ITR "Inspection before test" to be checked during reinstatement.

Name: Lorenzo Novaga

Date: 2025-01-07

Signature: Digitaly signed by Lorenzo Novaga 2025-01-07T17:17:16.368Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-01-07T17:17:32.937Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Activity done.

Name: Lorenzo Novaga

Date: 2025-02-14

Signature: Digitaly signed by Lorenzo Novaga 2025-02-14T11:48:25.013Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002670

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003553	1.4 Discipline	Piping
1.2 Item	25-05-TP-042	Test Pack 25-05-TP-042	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

For all piping supports the materials for the S-211, S-212 and C-16 standards have not yet been installed.

Name: Kangi Albonetti

Date: 2025-01-10

Signature: Digitaly signed by Kangi Albonetti 2025-01-10T17:47:00.182Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-10
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-10T17:47:16.852Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Activity done

Name: Lorenzo Novaga

Date: 2025-02-20

Signature: Digitaly signed by Lorenzo Novaga 2025-02-20T16:16:05.149Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002674

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003553	1.4 Discipline	Piping
1.2 Item	25-05-TP-042	Test Pack 25-05-TP-042	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Spool has not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the after test phase.

Name: Kangi Albonetti

Date: 2025-01-10

Signature: Digitaly signed by Kangi Albonetti 2025-01-10T17:49:17.652Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-10
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-10T17:49:33.583Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Kangi Albonetti

Date: 2025-02-19

Signature: Digitaly signed by Kangi Albonetti 2025-02-19T08:12:21.777Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002678

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003553	1.4 Discipline	Piping
1.2 Item	25-05-TP-042	Test Pack 25-05-TP-042	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Valves installation to be checked after test.

Name: Kangi Albonetti

Date: 2025-01-10

Signature: Digitaly signed by Kangi Albonetti 2025-01-10T17:51:39.282Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-10
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-10T17:51:54.963Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

checked during reinstatement

Name: Kangi Albonetti

Date: 2025-02-19

Signature: Digitaly signed by Kangi Albonetti 2025-02-19T08:13:10.356Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002897

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003365	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

SK.093; PS-02017.1/.2/.3/.4: Positions R1, R2 and R3 have not been assembled.

Name: Kangi Albonetti

Date: 2025-01-16

Signature: Digitaly signed by Kangi Albonetti 2025-01-16T07:00:29.231Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-16
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-16T07:00:43.648Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Mancini

Date: 2025-02-03

Signature: Digitaly signed by Andrea Mancini 2025-02-03T16:06:39.312Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002906

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003365	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Spools have not been installed in erection. Inspection points from 4 to 6 to be checked during flange management in the reinstatement phase.

Name: Kangi Albonetti

Date: 2025-01-16

Signature: Digitaly signed by Kangi Albonetti 2025-01-16T07:33:41.425Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-16
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-16T07:33:59.395Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Mancini

Date: 2025-02-03

Signature: Digitaly signed by Andrea Mancini 2025-02-03T16:09:41.776Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003192

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001481	1.4 Discipline	ATEX
1.2 Item	25-FT-038	Flow Transmitter - Nitrogen to V-25001E Vessel	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

The plug is not installed according to the specifications. To be replaced with plug Ex-d/e IIC , (see 123A90-DDL-IN-HD-40079_Rev.02 sh. 12).

Name: Alessio Polo

Date: 2025-01-24

Signature: Digitaly signed by Alessio Polo 2025-01-24T16:39:09.283Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Alessio Polo 2025-01-24T16:39:18.658Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-08

Signature: Digitaly signed by Giovanni Tangianu 2025-03-08T09:26:59.722Z

6- CLEARANCE APPROVAL

Name

Date

Signature


CAUTION
USE ASSISTANCE
Tag No: 25-FT-032
WARNING
ASSEMBLED IN:
Hungary

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003193

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000034	1.4 Discipline	Instrumental
1.2 Item	C-25-FT-038/00-JE-11003	FLOW TRANSMITTER / MARSHALLING PCS	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Missing cores identification tag. side JB 00-JE-11003 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo

Date: 2025-01-24

Signature: Digitaly signed by Alessio Polo 2025-01-24T16:59:38.307Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Alessio Polo 2025-01-24T16:59:47.148Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-11

Signature: Digitaly signed by Alessio Polo 2025-02-11T12:32:00.071Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003212

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001747	1.4 Discipline	ATEX
1.2 Item	25-ZSHL-038	Open/closed Limit Switches - Nitrogen to V-25001E Vessel	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

The enclosure gasket is damage. To be replace

Name: Alessio Polo

Date: 2025-01-27

Signature: Digitaly signed by Alessio Polo 2025-01-27T10:59:29.583Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-27
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Alessio Polo 2025-01-27T10:59:44.094Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-01-31

Signature: Digitaly signed by Alessio Polo 2025-01-31T10:33:27.942Z

6- CLEARANCE APPROVAL

Name

Date

Signature



ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003241

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002391	1.4 Discipline	Mechanical
1.2 Item	V-25001E	Hydrogen storage vessel A	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

The vessel has not been positioned as for layout document 123A90-DDL-IN-DL-40081 but has been positioned in place of the vessel B.

Name: Mattia Biaggioni

Date: 2025-01-28

Signature: Digitaly signed by Mattia Biaggioni 2025-01-28T13:17:02.518Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Mattia Biaggioni
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Mattia Biaggioni 2025-01-28T13:18:18.257Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

PL closed as for Reaction plan described in NCR.2025-Q-123A90-0003.

Name: Kangi Albonetti

Date: 2025-02-12

Signature: Digitaly signed by Kangi Albonetti 2025-02-12T17:11:38.939Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003248

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002391	1.4 Discipline	Mechanical
1.2 Item	V-25001E	Hydrogen storage vessel A	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Internal inspection of Vessel has not been performed. Manway shall be opened to carry out internal inspection.

Name: Mattia Biaggioni

Date: 2025-01-28

Signature: Digitaly signed by Mattia Biaggioni 2025-01-28T13:44:01.632Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Mattia Biaggioni
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Mattia Biaggioni 2025-01-28T13:44:27.341Z

4 - PERFORMED ACTION

Manways have been opened and the vessel has been cleaned inside.

Name: Daniele Cavirani

Date: 2025-02-12

Signature: Digitaly signed by Daniele Cavirani 2025-02-12T13:38:52.185Z

5 - CLEARANCE CHECK

Internal inspection performed after opening of manways. The internal of the vessel has been deemed acceptable both for cleanliness and congruence with design.

Name: Kangi Albonetti

Date: 2025-02-12

Signature: Digitaly signed by Kangi Albonetti 2025-02-12T13:38:59.007Z

6- CLEARANCE APPROVAL

Cleaniness reviewed together with Ballard representative.

Name: Jan Duinhoven

Date: 2025-02-12

Signature: Digitaly signed by Jan Duinhoven 2025-02-12T16:07:19.644Z





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003260

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004755	1.4 Discipline	ATEX
1.2 Item	25-PSV-038	Safety Valve	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

On ATEX register (123A90-DDL-EL-LIS-20094 sheet 6) SN is 24-03795 but actual is 24-03803

Name: Luca Mussi

Date: 2025-01-28

Signature: Digitaly signed by Luca Mussi 2025-01-28T17:12:38.450Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-28
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Luca Mussi 2025-01-28T17:13:00.330Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ATEX register updated.

Name: Giovanni Tangianu

Date: 2025-04-17

Signature: Digitaly signed by Giovanni Tangianu 2025-04-17T11:13:51.832Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003285

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003318	1.4 Discipline	Piping
1.2 Item	25-05-TP-012	Test Pack 25-05-TP-012	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

MIssing earthing connection on earthing plate (Vessel V -25001E side)

Name: Andrea Mancini

Date: 2025-01-29

Signature: Digitaly signed by Andrea Mancini 2025-01-29T10:31:29.073Z

3 - DEFECT ASSESSMENT

MIssing earthing connection on earthing plate (Vessel V -25001E side)

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-01-29
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Andrea Mancini 2025-01-29T10:31:48.424Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Luca Mussi

Date: 2025-02-14

Signature: Digitaly signed by Luca Mussi 2025-02-14T07:19:21.304Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003350

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004741	1.4 Discipline	ATEX
1.2 Item	25-PG-038	Air Set Pressure Gauge Filter	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

On ATEX register equipment model is MBS6P4S2PN07-ATEX while actual is MBS6P4S2PN6S-ATEX

Name: Luca Mussi

Date: 2025-01-30

Signature: Digitaly signed by Luca Mussi 2025-01-30T14:36:15.796Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Luca Mussi 2025-01-30T14:36:29.266Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ATEX register updated.

Name: Giovanni Tangianu

Date: 2025-04-17

Signature: Digitaly signed by Giovanni Tangianu 2025-04-17T11:14:51.218Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003351

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004741	1.4 Discipline	ATEX
1.2 Item	25-PG-038	Air Set Pressure Gauge Filter	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Equipment ATEX label is missing

Name: Luca Mussi

Date: 2025-01-30

Signature: Digitaly signed by Luca Mussi 2025-01-30T14:36:41.226Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	VND Vendor	Signature	Digitaly signed by Luca Mussi 2025-01-30T14:36:51.701Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Label provided

Name: Luca Mussi

Date: 2025-02-03

Signature: Digitaly signed by Luca Mussi 2025-02-03T16:44:14.338Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003359

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002391	1.4 Discipline	Mechanical
1.2 Item	V-25001E	Hydrogen storage vessel A	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Bolts and nuts of manholes are rusted.

Name: Mattia Biaggioni

Date: 2025-01-30

Signature: Digitaly signed by Mattia Biaggioni 2025-01-30T15:59:10.113Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Mattia Biaggioni
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Mattia Biaggioni 2025-01-30T15:59:24.377Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Cleaned and preserved.

Name: Kangi Albonetti

Date: 2025-02-25

Signature: Digitaly signed by Kangi Albonetti 2025-02-25T16:26:20.833Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003364

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002391	1.4 Discipline	Mechanical
1.2 Item	V-25001E	Hydrogen storage vessel A	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Earthing lug not connected.

Name: Kangi Albonetti

Date: 2025-01-30

Signature: Digitaly signed by Kangi Albonetti 2025-01-30T16:06:49.280Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-30T16:06:59.694Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Earthing connection completed.

Name: Kangi Albonetti

Date: 2025-02-18

Signature: Digitaly signed by Kangi Albonetti 2025-02-18T16:47:45.131Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003374

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002391	1.4 Discipline	Mechanical
1.2 Item	V-25001E	Hydrogen storage vessel A	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Painting touch-ups to be made after installation.

Name: Kangi Albonetti

Date: 2025-01-30

Signature: Digitaly signed by Kangi Albonetti 2025-01-30T16:11:42.282Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-30T16:11:52.369Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-04-11

Signature: Digitaly signed by Lorenzo Novaga 2025-04-11T09:27:27.756Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003391

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002391	1.4 Discipline	Mechanical
1.2 Item	V-25001E	Hydrogen storage vessel A	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

There is an unacceptable gap between saddle and basement. Not fixed to the structure.

Name: Kangi Albonetti

Date: 2025-01-30

Signature: Digitaly signed by Kangi Albonetti 2025-01-30T16:21:59.814Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-30T16:22:11.804Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Gap fixed. Vessel torqued to structure.

Name: Kangi Albonetti

Date: 2025-03-01

Signature: Digitaly signed by Kangi Albonetti 2025-03-01T08:28:56.996Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003401

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002391	1.4 Discipline	Mechanical
1.2 Item	V-25001E	Hydrogen storage vessel A	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Access platform to the vessel not installed.

Name: Kangi Albonetti

Date: 2025-01-30

Signature: Digitaly signed by Kangi Albonetti 2025-01-30T16:28:23.477Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-30T16:28:35.757Z

4 - PERFORMED ACTION

Name

Date: 2025-04-23

Signature

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-04-23

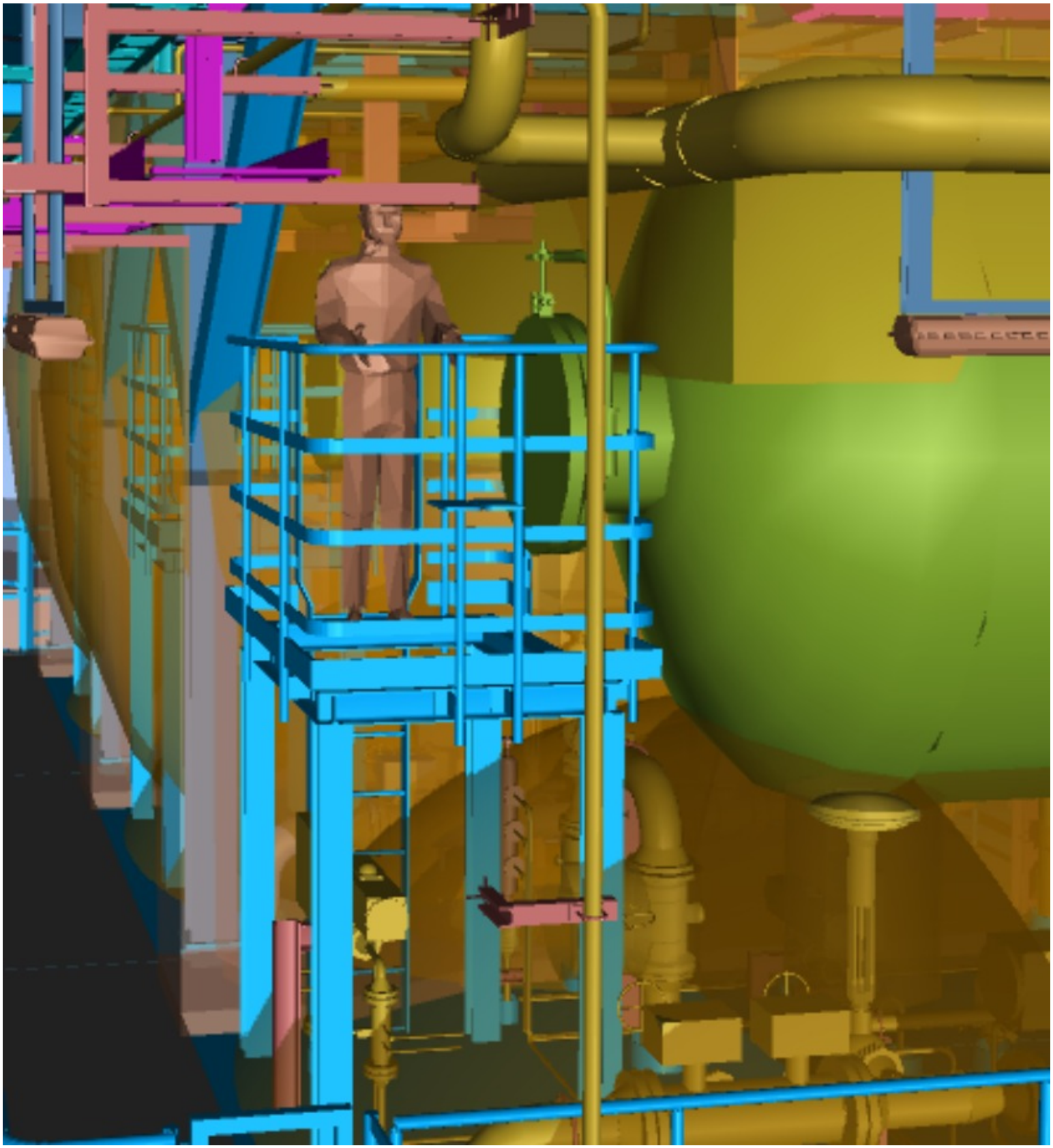
Signature: Digitaly signed by Lorenzo Novaga 2025-04-23T09:11:20.722Z

6- CLEARANCE APPROVAL

Name

Date: 2025-04-23

Signature



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003428

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003366	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Missing earthing connection on earthing plate

Name: Andrea Mancini

Date: 2025-01-31

Signature: Digitaly signed by Andrea Mancini 2025-01-31T12:36:19.265Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-01-31
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Andrea Mancini 2025-01-31T12:36:35.858Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2025-02-12

Signature: Digitaly signed by Eleonora Carotenuto 2025-02-12T11:27:17.404Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003430

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003366	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Isolation rubber on Support PS-02017.1 is damaged

Name: Andrea Mancini

Date: 2025-01-31

Signature: Digitaly signed by Andrea Mancini 2025-01-31T12:37:14.402Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-01-31
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Andrea Mancini 2025-01-31T12:37:28.809Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Activity done.

Name: Lorenzo Novaga

Date: 2025-02-07

Signature: Digitaly signed by Lorenzo Novaga 2025-02-07T12:03:29.505Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003432

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003366	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Missing PTFE isolation pad on support PS-02017.4

Name: Andrea Mancini

Date: 2025-01-31

Signature: Digitaly signed by Andrea Mancini 2025-01-31T12:38:16.905Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Mancini
3.4 Activity code	MC Mechanical Completion	Date	2025-01-31
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Andrea Mancini 2025-01-31T12:38:29.279Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Activity done.

Name: Lorenzo Novaga

Date: 2025-02-07

Signature: Digitaly signed by Lorenzo Novaga 2025-02-07T12:03:38.973Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003446

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003560	1.4 Discipline	Piping
1.2 Item	25-05-TP-042	Test Pack 25-05-TP-042	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

The spools have not been properly cleaned inside and in some there are debris and/or rust points.

Name: Kangi Albonetti

Date: 2025-01-31

Signature: Digitaly signed by Kangi Albonetti 2025-01-31T18:30:31.635Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-31
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-01-31T18:30:44.738Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Cleaned.

Name: Kangi Albonetti

Date: 2025-02-12

Signature: Digitaly signed by Kangi Albonetti 2025-02-12T13:55:44.246Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003533

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003319	1.4 Discipline	Piping
1.2 Item	25-05-TP-012	Test Pack 25-05-TP-012	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Kangi Albonetti

Date: 2025-02-05

Signature: Digitaly signed by Kangi Albonetti 2025-02-05T09:39:45.647Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-05
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-02-05T09:40:12.621Z

4 - PERFORMED ACTION

Name

Date: 2025-03-21

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-21

Signature: Digitaly signed by Lorenzo Novaga 2025-03-21T14:02:42.763Z

6- CLEARANCE APPROVAL

Name

Date: 2025-03-21

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003538

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003319	1.4 Discipline	Piping
1.2 Item	25-05-TP-012	Test Pack 25-05-TP-012	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

General touch up do to, especially near the supports of the piping line.

Name: Kangi Albonetti

Date: 2025-02-05

Signature: Digitaly signed by Kangi Albonetti 2025-02-05T09:46:26.946Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-05
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-02-05T09:46:46.850Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Activity done.

Name: Kangi Albonetti

Date: 2025-02-06

Signature: Digitaly signed by Kangi Albonetti 2025-02-06T14:39:45.933Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003544

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003367	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Kangi Albonetti

Date: 2025-02-05

Signature: Digitaly signed by Kangi Albonetti 2025-02-05T11:49:02.451Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-05
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-02-05T11:49:15.868Z

4 - PERFORMED ACTION

Name

Date: 2025-03-21

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-21

Signature: Digitaly signed by Lorenzo Novaga 2025-03-21T14:02:24.829Z

6- CLEARANCE APPROVAL

Name

Date: 2025-03-21

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003548

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003367	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

General touch up do to, especially near the supports of the piping line.

Name: Kangi Albonetti

Date: 2025-02-05

Signature: Digitaly signed by Kangi Albonetti 2025-02-05T11:56:11.809Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-05
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-02-05T11:56:26.715Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Activity done.

Name: Kangi Albonetti

Date: 2025-02-06

Signature: Digitaly signed by Kangi Albonetti 2025-02-06T14:39:06.804Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003645

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003647	1.4 Discipline	Piping
1.2 Item	25-05-TP-056	Test Pack 25-05-TP-056	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Kangi Albonetti

Date: 2025-02-11

Signature: Digitaly signed by Kangi Albonetti 2025-02-11T08:22:05.405Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-11
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-02-11T08:22:25.207Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Not applicable.

Name: Lorenzo Novaga

Date: 2025-03-20

Signature: Digitaly signed by Lorenzo Novaga 2025-03-20T12:26:40.767Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003738

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003366	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Missing PTFE isolation pad on support PS-02017.4

Name: Lorenzo Novaga

Date: 2025-02-12

Signature: Digitaly signed by Lorenzo Novaga 2025-02-12T08:54:26.745Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-12
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-02-12T08:54:36.346Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Activity done.

Name: Lorenzo Novaga

Date: 2025-02-14

Signature: Digitaly signed by Lorenzo Novaga 2025-02-14T08:07:04.923Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003740

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003366	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Isolation rubber on Support PS-02017.1 (S-211) is damaged

Name: Lorenzo Novaga

Date: 2025-02-12

Signature: Digitaly signed by Lorenzo Novaga 2025-02-12T08:55:22.857Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-12
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-02-12T08:55:31.372Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-03

Signature: Digitaly signed by Lorenzo Novaga 2025-03-03T11:30:55.708Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003741

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003367	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Spool F needs touch up

Name: Lorenzo Novaga

Date: 2025-02-12

Signature: Digitaly signed by Lorenzo Novaga 2025-02-12T08:56:30.114Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-12
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-02-12T08:56:38.651Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-20

Signature: Digitaly signed by Lorenzo Novaga 2025-03-20T17:41:40.269Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003742

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003367	1.4 Discipline	Piping
1.2 Item	25-05-TP-018	Test Pack 25-05-TP-018	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Touch up under the plastic ties

Name: Lorenzo Novaga

Date: 2025-02-12

Signature: Digitaly signed by Lorenzo Novaga 2025-02-12T08:57:10.843Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-12
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-02-12T08:57:19.202Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-20

Signature: Digitaly signed by Lorenzo Novaga 2025-03-20T17:41:34.980Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003772

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003506	1.4 Discipline	Piping
1.2 Item	25-05-TP-036	Test Pack 25-05-TP-036	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Earthing lug not connected to earth.

Name: Lorenzo Novaga

Date: 2025-02-12

Signature: Digitaly signed by Lorenzo Novaga 2025-02-12T17:15:47.176Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-12
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-02-12T17:15:54.492Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Luca Mussi

Date: 2025-02-15

Signature: Digitaly signed by Luca Mussi 2025-02-15T13:50:45.530Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003800

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001162	1.4 Discipline	ATEX
1.2 Item	25-PSV-001E		Pressure Safety Valve - Vessel V-25001E Hydrogen Vent System
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

Scratches on painting, general touch-up to be performed

Name: Luca Mussi

Date: 2025-02-13

Signature: Digitaly signed by Luca Mussi 2025-02-13T14:04:44.021Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-13
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Luca Mussi 2025-02-13T14:04:56.557Z

4 - PERFORMED ACTION

Name

Date: 2025-04-11

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-04-11

Signature: Digitaly signed by Lorenzo Novaga 2025-04-11T13:16:34.014Z

6- CLEARANCE APPROVAL

Name

Date: 2025-04-11

Signature


OK


023-36
JHP2

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003857

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004816	1.4 Discipline	ATEX
1.2 Item	25-PSV-016	Safety Valve - Vessel V-25001E Hydrogen Vent System	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Equipment ATEX identification label is missing

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T10:50:38.040Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	VND Vendor	Signature	Digitaly signed by Luca Mussi 2025-02-17T10:50:54.949Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Equipment ATEX label was installed by vendor on site.

Name: Giovanni Tangianu

Date: 2025-04-24

Signature: Digitaly signed by Giovanni Tangianu 2025-04-24T14:23:08.080Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003858

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004816	1.4 Discipline	ATEX
1.2 Item	25-PSV-016	Safety Valve - Vessel V-25001E Hydrogen Vent System	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

ATEX Declaration of Conformity by Manufacturer is missing

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T10:51:08.487Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	VND Vendor	Signature	Digitaly signed by Luca Mussi 2025-02-17T10:51:27.180Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Declaration of conformity has been provide by vendor.

Name: Giovanni Tangianu

Date: 2025-04-24

Signature: Digitaly signed by Giovanni Tangianu 2025-04-24T14:23:25.127Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003861

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004746	1.4 Discipline	ATEX
1.2 Item	25-PG-046	Air Set Pressure Gauge Filter	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

On ATEX register (123A90-DDL-EL-LIS-20094) equipment model is MBS6P4S2PN07-ATEX while actual is MBS6P4S2PN6S-ATEX

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T12:33:41.455Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Luca Mussi 2025-02-17T12:38:56.019Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ATEX register updated.

Name: Giovanni Tangianu

Date: 2025-04-17

Signature: Digitaly signed by Giovanni Tangianu 2025-04-17T11:16:48.540Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003862

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004760	1.4 Discipline	ATEX
1.2 Item	25-PSV-046	Safety Valve	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

On ATEX register (123A90-DDL-EL-LIS-20094 sheet 6) equipment SN is 24-03800 but actual is 24-03797

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T12:38:21.216Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	ENG Engineering	Signature	Digitaly signed by Luca Mussi 2025-02-17T12:38:31.547Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ATEX register updated.

Name: Giovanni Tangianu

Date: 2025-04-17

Signature: Digitaly signed by Giovanni Tangianu 2025-04-17T11:16:58.842Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003922

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001564	1.4 Discipline	ATEX
1.2 Item	25-BDV-016		On/Off Valve - Vessel V-25001E Hydrogen Vent System
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

Scratches on painting, general touch-up to be performed

Name: Luca Mussi

Date: 2025-02-17

Signature: Digitaly signed by Luca Mussi 2025-02-17T16:11:05.344Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Luca Mussi 2025-02-17T16:11:22.921Z

4 - PERFORMED ACTION

Name

Date: 2025-04-08

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-04-08

Signature: Digitaly signed by Lorenzo Novaga 2025-04-08T14:51:54.481Z

6- CLEARANCE APPROVAL

Name

Date: 2025-04-08

Signature



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003938

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001983	1.4 Discipline	Instrumental
1.2 Item	AV-63012/25-BDV-016	Pneumatic Connection Air Supply - 25-BDV-016	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Missing support on the tubing side the 25-BDV-016 . See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-17

Signature: Digitaly signed by Giovanni Tangianu 2025-02-17T16:47:29.285Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2025-02-17T16:47:46.661Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-24

Signature: Digitaly signed by Andrea Andreani 2025-02-24T16:01:43.431Z

6- CLEARANCE APPROVAL

Name

Date

Signature


rotork
fluid systems
www.rotork.com

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003940

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001983	1.4 Discipline	Instrumental
1.2 Item	AV-63012/25-BDV-016	Pneumatic Connection Air Supply - 25-BDV-016	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Missing SS tag both side the tubing.

Name: Giovanni Tangianu

Date: 2025-02-17

Signature: Digitaly signed by Giovanni Tangianu 2025-02-17T16:48:49.754Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2025-02-17T16:48:59.632Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-20

Signature: Digitaly signed by Andrea Andreani 2025-02-20T15:46:17.750Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003942

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001982	1.4 Discipline	Instrumental
1.2 Item	AV-63012/25-PV-046	Pneumatic Connection Air Supply - 25-PV-046	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Missing SS tag both side the tubing.

Name: Giovanni Tangianu

Date: 2025-02-17

Signature: Digitaly signed by Giovanni Tangianu 2025-02-17T16:50:00.255Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2025-02-17T16:50:11.348Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-20

Signature: Digitaly signed by Andrea Andreani 2025-02-20T15:48:24.865Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003948

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000174	1.4 Discipline	Instrumental
1.2 Item	C-25-BDY-016/00-JE-23001	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

the cable installed is temporary. To be replaced

Name: Andrea Andreani

Date: 2025-02-17

Signature: Digitaly signed by Andrea Andreani 2025-02-17T16:59:44.274Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Andreani
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	PRE-COMM	Signature	Digitaly signed by Andrea Andreani 2025-02-17T16:59:58.396Z

4 - PERFORMED ACTION

Name

Date: 2025-04-08

Signature

5 - CLEARANCE CHECK

THE CABLE HAS BEEN REPLACED.

Name: Giovanni Tangianu

Date: 2025-04-07

Signature: Digitaly signed by Giovanni Tangianu 2025-04-07T12:18:08.980Z

6- CLEARANCE APPROVAL

Name

Date: 2025-04-08

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003983

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001494	1.4 Discipline	ATEX
1.2 Item	25-PT-046		Pressure Transmitter - Vessel V-25001E Pressure Control
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

Missing tag SS , on the instrument.

Name: Alessio Polo

Date: 2025-02-18

Signature: Digitaly signed by Alessio Polo 2025-02-18T14:59:55.014Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-18
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Alessio Polo 2025-02-18T15:00:03.808Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-01

Signature: Digitaly signed by Josip Krizanic 2025-03-01T09:01:36.508Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003989

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001488	1.4 Discipline	ATEX
1.2 Item	25-PT-011		Pressure Transmitter - Vessel V-25001E Hydrogen Vent System
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

Missing tag SS , on the instrument.

Name: Alessio Polo

Date: 2025-02-18

Signature: Digitaly signed by Alessio Polo 2025-02-18T15:32:04.851Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-18
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Alessio Polo 2025-02-18T15:32:12.651Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-01

Signature: Digitaly signed by Josip Krizanic 2025-03-01T09:02:37.612Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003990

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001708	1.4 Discipline	ATEX
1.2 Item	25-PY-046		Electropositioner - Vessel V-25001E Pressure Control
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

missing SS tag

Name: Andrea Andreani

Date: 2025-02-18

Signature: Digitaly signed by Andrea Andreani 2025-02-18T15:35:40.655Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Andreani
3.4 Activity code	MC Mechanical Completion	Date	2025-02-18
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Andrea Andreani 2025-02-18T15:35:84.278Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-03

Signature: Digitaly signed by Josip Krizanic 2025-03-03T14:40:37.743Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003992

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001584	1.4 Discipline	ATEX
1.2 Item	25-PV-046		Control Valve - Vessel V-25001E Pressure Control
1.3 Subsystem	25-05		Hydrogen Storage Vessel E (V-25001E)

2 - OBSERVATION

Scratches on painting, general touch-up to be performed

Name: Luca Mussi

Date: 2025-02-18

Signature: Digitaly signed by Luca Mussi 2025-02-18T15:38:47.147Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-18
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Luca Mussi 2025-02-18T15:38:88.646Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature: Digitaly signed by Lorenzo Novaga 2025-04-04T12:36:01.644Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003994

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001750	1.4 Discipline	ATEX
1.2 Item	25-ZSHL-046	Open/closed Limit Switches - Vessel V-25001E Pressure Control	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

missing SS tag

Name: Andrea Andreani

Date: 2025-02-18

Signature: Digitaly signed by Andrea Andreani 2025-02-18T15:41:50.965Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Andrea Andreani
3.4 Activity code	MC Mechanical Completion	Date	2025-02-18
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Andrea Andreani 2025-02-18T15:42:05.805Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-03

Signature: Digitaly signed by Josip Krizanic 2025-03-03T14:40:54.071Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004055

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003555	1.4 Discipline	Piping
1.2 Item	25-05-TP-042	Test Pack 25-05-TP-042	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Lorenzo Novaga

Date: 2025-02-20

Signature: Digitaly signed by Lorenzo Novaga 2025-02-20T15:36:37.459Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-20
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-02-20T15:36:46.121Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Connected.

Name: Kangi Albonetti

Date: 2025-02-26

Signature: Digitaly signed by Kangi Albonetti 2025-02-26T17:23:37.537Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004058

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003555	1.4 Discipline	Piping
1.2 Item	25-05-TP-042	Test Pack 25-05-TP-042	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Earthing plate totally painted.

Name: Lorenzo Novaga

Date: 2025-02-20

Signature: Digitaly signed by Lorenzo Novaga 2025-02-20T15:38:06.001Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-20
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-02-20T15:38:16.153Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-02-26

Signature: Digitaly signed by Lorenzo Novaga 2025-02-26T13:41:38.147Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004060

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003554	1.4 Discipline	Piping
1.2 Item	25-05-TP-042	Test Pack 25-05-TP-042	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Earthing lug not connected to earth.

Name: Lorenzo Novaga

Date: 2025-02-20

Signature: Digitaly signed by Lorenzo Novaga 2025-02-20T16:09:53.500Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-20
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-02-20T16:10:02.138Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004203

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003555	1.4 Discipline	Piping
1.2 Item	25-05-TP-042	Test Pack 25-05-TP-042	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Lorenzo Novaga

Date: 2025-03-06

Signature: Digitaly signed by Lorenzo Novaga 2025-03-06T15:39:43.907Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-06
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-03-06T15:39:52.395Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-20

Signature: Digitaly signed by Lorenzo Novaga 2025-03-20T12:39:24.797Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004204

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003507	1.4 Discipline	Piping
1.2 Item	25-05-TP-036	Test Pack 25-05-TP-036	
1.3 Subsystem	25-05	Hydrogen Storage Vessel E (V-25001E)	

2 - OBSERVATION

Color coding and fluid direction are missing.

Name: Lorenzo Novaga

Date: 2025-03-06

Signature: Digitaly signed by Lorenzo Novaga 2025-03-06T15:40:16.573Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-06
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Lorenzo Novaga 2025-03-06T15:40:28.006Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-20

Signature: Digitaly signed by Lorenzo Novaga 2025-03-20T12:39:18.960Z

6- CLEARANCE APPROVAL

Name

Date

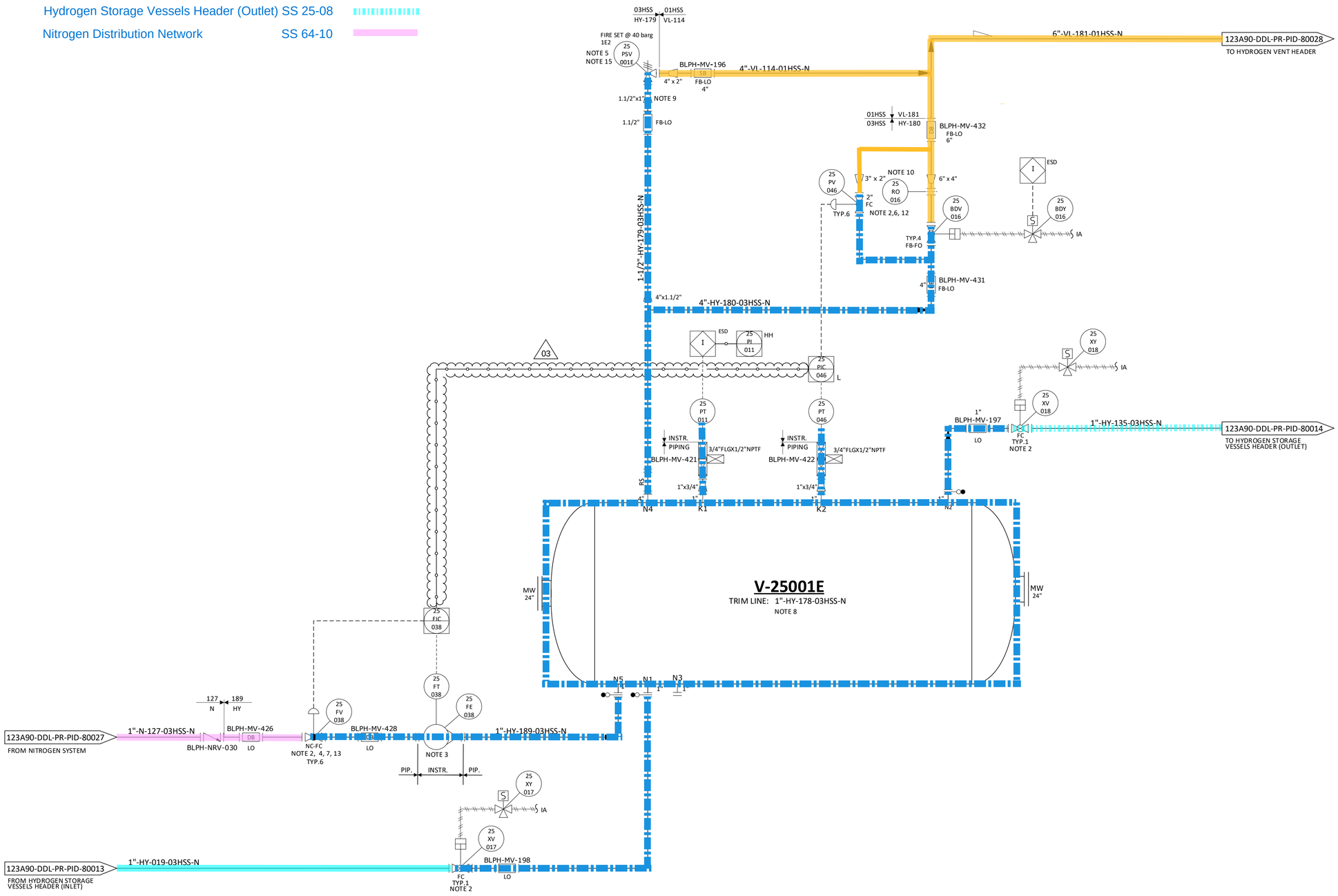
Signature

Section 3 SYSTEM,SUB-SYSTEM LIMIT DRAWINGS

DRAWING NO. DRAWING_NO.

REV. REV

Hydrogen Storage Vessel E (V-25001E)	SS 25-05
Hydrogen Vent Header & Drum System	SS 43-00
Hydrogen Storage Vessels Header (inlet)	SS 25-07
Hydrogen Storage Vessels Header (Outlet)	SS 25-08
Nitrogen Distribution Network	SS 64-10



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001 / REV. 03

File Name : FILE_NAME

Section 4 MECHANICAL COMPLETION STATUS INDEX - BUILDING DISCIPLINE

NOT APPLICABLE

Section 5 MECHANICAL COMPLETION STATUS INDEX - ELECTRICAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC & discipline : Y

ATEX	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
25-BDV-016	On/Off Valve - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001564	CJX01	100	2025-02-17	RFC 1
25-BDY-016	Solenoid Valve - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001571	CJX01	100	2025-02-18	RFC 1
25-FT-038	Flow Transmitter - Nitrogen to V-25001E Vessel	ONSHORE	C10001481	CJX01	100	2025-01-24	RFC 1
25-FV-038	Control Valve - Nitrogen to V-25001E Vessel	ONSHORE	C10001579	CJX01	100	2025-01-28	RFC 1
25-FY-038	Electropositioner - Nitrogen to V-25001E Vessel	ONSHORE	C10001703	CJX01	100	2025-01-25	RFC 1
25-PCV-016	Air Set Filter - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001614	CJX01	100	2025-02-17	RFC 1
25-PG-016	Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10004809	CJX01	100	2025-04-24	RFC 1
25-PG-038	Air Set Pressure Gauge Filter	ONSHORE	C10004741	CJX01	100	2025-01-30	RFC 1
25-PG-046	Air Set Pressure Gauge Filter	ONSHORE	C10004746	CJX01	100	2025-02-17	RFC 1
25-PSV-001E	Pressure Safety Valve - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001162	CJX01	100	2025-02-13	RFC 1
25-PSV-016	Safety Valve - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10004816	CJX01	100	2025-02-17	RFC 1
25-PSV-038	Safety Valve	ONSHORE	C10004755	CJX01	100	2025-01-28	RFC 1
25-PSV-046	Safety Valve	ONSHORE	C10004760	CJX01	100	2025-02-17	RFC 1
25-PT-011	Pressure Transmitter - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001488	CJX01	100	2025-02-18	RFC 1
25-PT-046	Pressure Transmitter - Vessel V-25001E Pressure Control	ONSHORE	C10001494	CJX01	100	2025-02-18	RFC 1
25-PV-046	Control Valve - Vessel V-25001E Pressure Control	ONSHORE	C10001584	CJX01	100	2025-02-18	RFC 1
25-PY-046	Electropositioner - Vessel V-25001E Pressure Control	ONSHORE	C10001708	CJX01	100	2025-02-18	RFC 1
25-SV-038	Air Set Filter	ONSHORE	C10004727	CJX01	100	2025-01-30	RFC 1
25-SV-046	Air Set Filter	ONSHORE	C10004732	CJX01	100	2025-02-17	RFC 1
25-ZSHL-016	Limit Switch Box - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10001607	CJX01	100	2025-02-18	RFC 1
25-ZSHL-038	Open/closed Limit Switches - Nitrogen to V-25001E Vessel	ONSHORE	C10001747	CJX01	100	2025-01-27	RFC 1
25-ZSHL-046	Open/closed Limit Switches - Vessel V-25001E Pressure Control	ONSHORE	C10001750	CJX01	100	2025-02-18	RFC 1

ITEM	Tag	25-PSV-001E	: Pressure Safety Valve - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80019		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10001162	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		291503			
Manufacturer	Technical Srl			**Model**		320-E20-5L			
Cert No.	Declaration of Conformity By Manufacturer			**Equipment Ambient Temp.**		-268 °C a +538 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	NA

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PSV-001E	: Pressure Safety Valve - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001162		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	PL	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PSV-001E	: Pressure Safety Valve - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001162		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-13	2025-02-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-13T08:10:24.972Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-13T14:05:07.150Z	

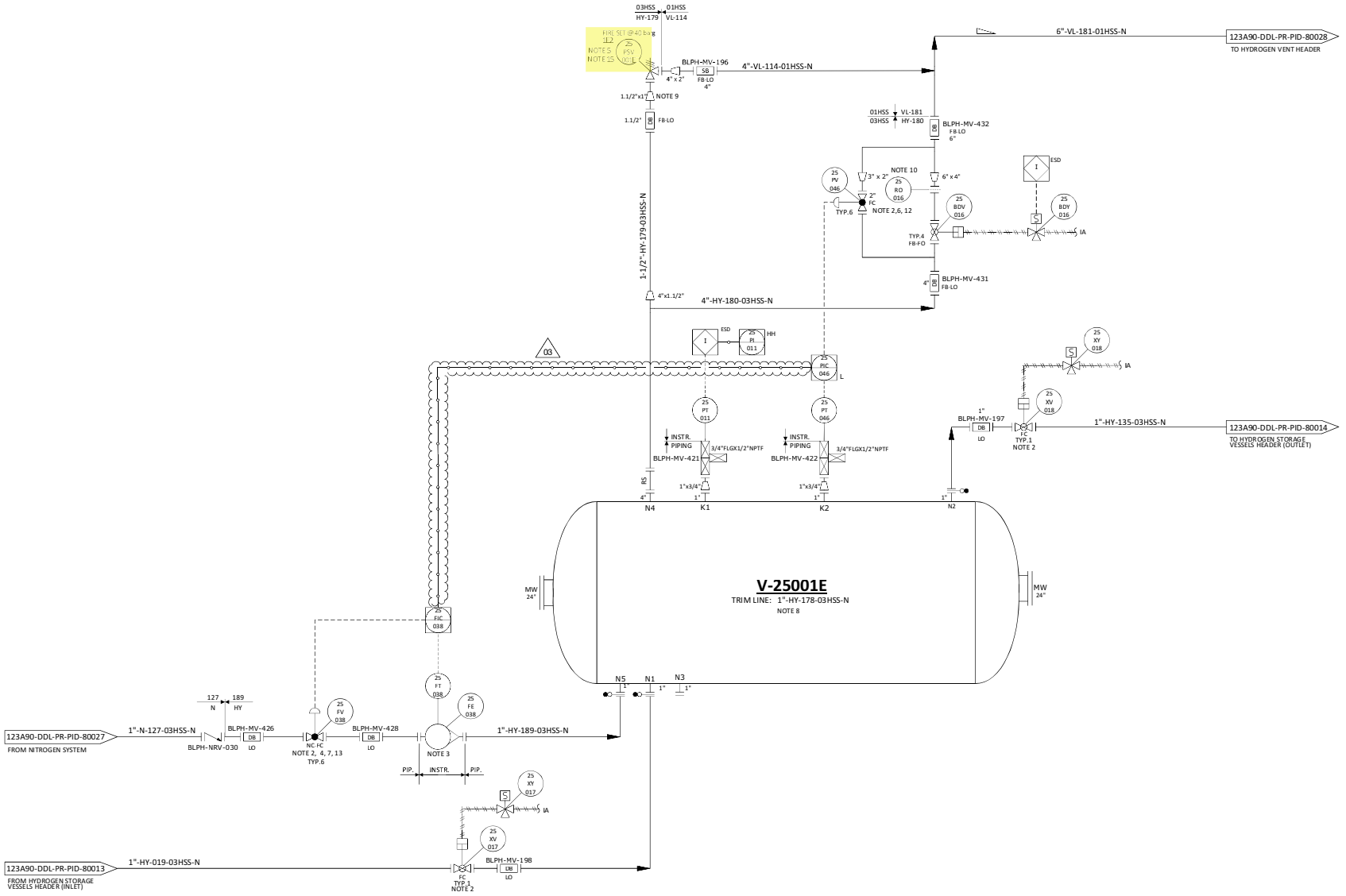
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
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7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
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13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

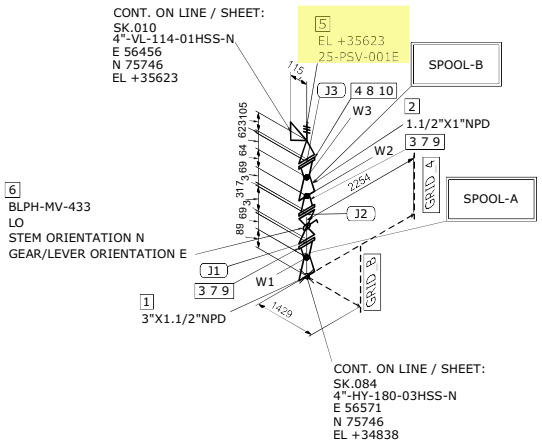
CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	3X1.1/2	REC0SS0128031H	Reducer Concentric ASME B16.9 BW 3,05x3,68 WRS ASTM A403 Gr.WP316/316L	1	0.5
2	1.1/2X1	REC0SS03191H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1.1/2	FLW0SS03481H00	Flange WN ASME B16.5 300LB RF 3,68 FRG ASTM A182 Gr.F316/316L	2	6.5
4	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		Pressure Safety Valve FLG.300/150#RF	1	15.0
6	1.1/2	VLBBNN07201H00	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	40.0
7	1.1/2	GSW0GK11221H00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.2
8	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	3/4	SB20BO23540400	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.1
10	5/8	SB20BO00680300	100 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	9.1
ERECTION WEIGHT [kg]	59.4
OVERALL WEIGHT [kg]	68.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	1.5	3.7
B	2.5	5.3
MONT	0	59.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-HY-179-03HSS-N

SK.083

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00083 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

NDT INSPECTION CATEGORY	1	PED. CATEGORY	II		
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB MEDIUM Water

REFERENCE DOCUMENTS

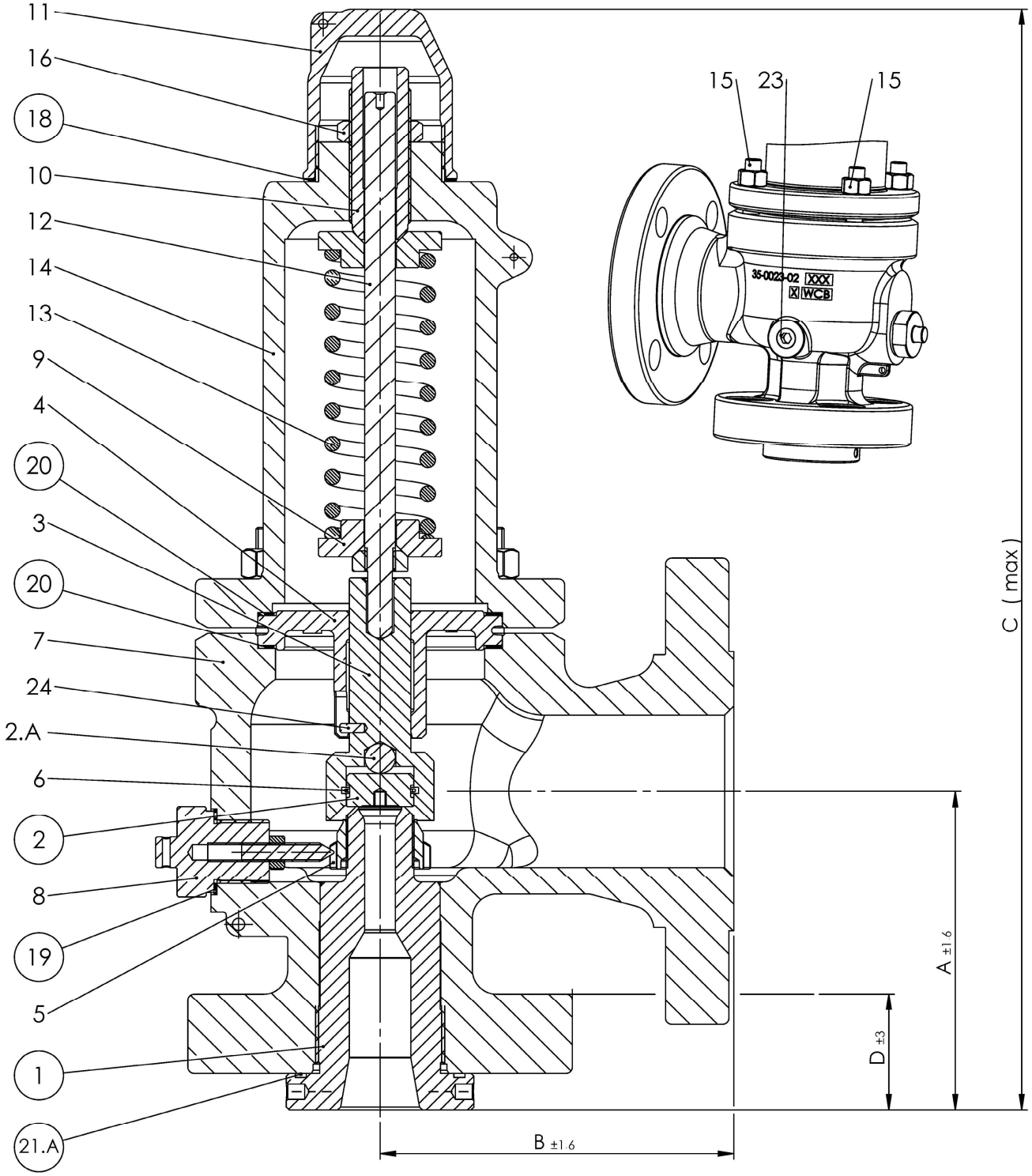
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

recommended spare parts

Overall dimensions in accordance with API 526



Flange dimensions as per ASME B16.5 except for inlet flange thickness that may be higher than minimun specified.

Connections ASME B16.5			Dimensions (mm)						Orifice / area cm²	Weight
INLET	OUTLET	RF	A	B	C max	D	E	F	E	kg
1" 300 RF	2" 150 RF		105	115	380	37.5			1.389	15

Model	Tag	Job. n°
320-E20-5L	25-PSV-001A/B/C/D/E/F	23/3962

Customer	Order. n°	Doc. n°
ROSETTI MARINO spa	1724000518 123A90A	23/3962_DWG_2-3-4-5-6-7

technical VIGNATE - MI - ITALY

Type: E2 1" 300 RF

Rev.	Date	Description	Prepared	Checked	Approved
1	23/07/2024	MODIFIED GASKETS 18-19-20-21a	DI VIRGILIO L.	TESA C.	BIANCHI R.
0	18/03/2024	ISSUED for ORDER	DI VIRGILIO L.	TESA C.	BIANCHI R.

jpg : 320-E20

technical ITALIAN VALVES MANUFACTURER SINCE 1973	Safety valve - 30000 Series - Bill of material		Job. n° 23/3962
	Model 320-E20-5L	Tag 25PSV-001A/B/C/D/E/F	SPT-075

Quantity	Peening	LANGUAGE	IT/EN		TYPE	320	Accessori	0
		MATERIAL CLASS	5L	-	SPRING	36	AISI 316	
		DESCRIZIONE / PART DESCRIPTION			MATERIALE / PART MATERIAL			
	1	Boccaglio / Nozzle			A479 316L			
	2	Otturatore / Disc			A479 316L			
	2a	Sfera / Ball			SS 316			
	3	Portaotturatore / Disc-holder			A747 CB7Cu-1			
	4	Guida / Liner			SS 316L			
	5	Anello Blowdown / Blowdown ring			SS 316L			
	6	Anello otturatore / Disc ring			SS 316			
	7	Corpo / Body			A351 CF8M			
	8	Vite blowdown / Blowdown screw			SS 316L			
	9	Piattello molla / Spring washer			STAINLESS STEEL			
	10	Vite taratura / Adjusting screw			SS 431			
	11	Cappello / Cap			A351 CF3M			
	12	Stelo / Stem			SS 316L			
	13	Molla / Spring			AISI 316			
	14	Coperchio / Bonnet			A351 CF8M			
	15	Tiranteria / Bolting - nut			A193 B8M / A194 8M			
	16	Controdado / Lock nut			SS 316L			
	18	Guarnizione / Gasket			FKM			
	19	Guarnizione / Gasket			FKM			
	20	Guarnizione / Gasket			ARAMID FIBER			
	21a	Guarnizione boccaglio / Nozzle gasket			FKM			
	23	Tappo drenaggio / Drain plug			SS 316			
	24	Spina / Pin			SS 316			

Note / Remarks

Rev.	Date	Description	Prepared	Checked	Approved
1	23/07/2024	MODIFIED GASKETS 18-19-20-21a	DI VIRGILIO L.	TESA C.	BIANCHI R.
0	18/03/2024	ISSUED for ORDER	DI VIRGILIO L.	TESA C.	BIANCHI R.

GENERAL	1	Tag Number		25-PSV-001E	
	2	Service		HYDROGEN FROM STORAGE VESSEL(V-25001E) TO HYDROGEN VENT HEADER	
	3	P&ID Number	Equipment No.	123A90-DDL-PR-PID-80019	V-25001E
	4	Nozzle (Full, Semi)	Line No.	Full	1"-HY-179-03HSS-N
	5	Design Safety, Relief, Safety-Relief		SAFETY-RELIEF (14)	
	6	Type Conventional, Bellow, Pilot Operated		Conventional	
	7	Bonnet Type		Closed	
	8	Design Conditions		40 barg @ 80°C	
PROCESS CONDITIONS	9	Fluid	State	HYDROGEN	GAS
	10	Required Capacity		736.4 [kg/h]	
	11	Molecular Mass		2.016	
	12	Oper. Pressure	Set Pressure	30 barg	40 barg
	13	Oper. Temperature	RelievingTemperature	25°C	201.9°C
	14	Back Pressure	Constant		
	15		Variable		
	16		Total	1 barg	
	17	% Allowable Overpressure		21%	
	18	Overpressure Factor			
	19	Compressibility Factor		1.015	
	20	Latent Heat of Vaporization			
	21	Ratio of Specific Heats		1.405	
	22	Relief Density			
	23	Relief Viscosity		0.01272 cP	
	24	Barometric Pressure		as per design basis	
	25				
BASIS AND SELECTION	26	Design Code		API STD 526	
	27	Sizing Basis		API STD 520 (Fire)	
	28	Calculated Area		1.0066 (8, 22)	
	29	Selected Area		1.389 cm^2 (8, 22)	
	30	Orifice Designation		E (8, 22)	
	31				
CONNECTIONS	32	Inlet Size, Rating & Style		Flanged ASME B16.5 / 1" / #300 RF (8, 22)	
	33	Outlet Size, Rating & Style		Flanged ASME B16.5 / 2" / #150 RF (8, 22)	
MATERIALS	34	Body and Bonnet		ASTM A351 CF8M (23)	
	35	Seat and Rings		AISI 316 (15)	
	36	Resilient Seat Seal		-	
	37	Guide and Rings		AISI 316L (15)	
	38	Spring		AISI 316 (15)	
	39	Bellows		-	
	40				
	41				
OPTIONS	42	Cap: Screwed or Bolted		Screwed	
	43	Lever: Plain or Packed		-	
	44	Test Gag		-	
	45				
	46				
PURCHASE	47	Manufacturer		Technical	
	48	Model		320-E20-5L	
	49	Purchase Order Number		1724000518 123A90A	
	50				

Notes:

						INSTRUMENT DATASHEET	CROSSWIND
						Pressure Safety Valves	ROSETTI MARINO
02	06/12/24	VB	LC	DL	Accepted for Construction		Sheet 10 of 13
01	28/08/24	VB	LC	DL	Accepted for Construction		
00	11/12/23	VB	LC	DL	Issued for Review		
No.	Date	By	Chkd	Appr	Description	Code: Dwg. No.:	Rev 02

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PG-032	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-033	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PG-034	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PG-035	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PG-036	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-037	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PG-038	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-040	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-043	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-046	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-049	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PG-055A	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PG-055B	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PSV-001A	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291498	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-001B	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291500	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001C	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291501	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001D	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291502	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001E	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291503	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001F	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291504	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PSV-031	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03790	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-032	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03791	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-033	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03792	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PSV-034	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03793	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PSV-035	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03796	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-036	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03794	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-037	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03797	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-038	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03795	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-040	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03798	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-043	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03799	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-046	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03800	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-049	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03801	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PSV-055A	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03802	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6

No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
1	01	80-PSV-001	Pressure safety valve	A-80000 package	Technical Srl	320-K10-5L	291496	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
2	01	80-PSV-001_S	Pressure safety valve	A-80000 package	Technical Srl	320-K10-5L	291497	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
3	01	25-PSV-001A	Pressure safety valve	Vessel V-25001A	Technical Srl	320-E20-5L	291498	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
5	01	25-PSV-001B	Pressure safety valve	Vessel V-25001B	Technical Srl	320-E20-5L	291500	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
6	01	25-PSV-001C	Pressure safety valve	Vessel V-25001C	Technical Srl	320-E20-5L	291501	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
7	01	25-PSV-001D	Pressure safety valve	Vessel V-25001D	Technical Srl	320-E20-5L	291502	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
8	01	25-PSV-001E	Pressure safety valve	Vessel V-25001E	Technical Srl	320-E20-5L	291503	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
9	01	25-PSV-001F	Pressure safety valve	Vessel V-25001F	Technical Srl	320-E20-5L	291504	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
10	01	64-PSV-001	Pressure safety valve	A-64000 Nitrogen generator package	Technical Srl	320-D10-L2	291505	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.
11	01	64-PSV-001_S	Pressure safety valve	A-64000 Nitrogen generator package	Technical Srl	320-D10-L2	291506	II 2G Ex h IIC T6..T1 Gb	1724000518-IN-DA-00003 1724000518-IN-DS-00004	Declaration of Conformity by Technical Srl	Zone 2		1724000518	Technical Srl	N.A.	N.A.	YES	N.A.

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
ISO 9001

DICHIARAZIONE DI COSTRUZIONE PER VALVOLE DI SICUREZZA SERIE 30.000N

CONSTRUCTION DECLARATION FOR SAFETY VALVES SERIAL 30.000N

n° 23/3962-6-191 | PROCEDURA/PROCEDURE N°IL 42

Matricola/Serial:	291503	Anno/Year:	2024
Cod. o Mod:	320-E20-5L	Classe:	5L
Ingresso/Inlet:	1" 300RF	Press. eser./Operating press.:	30 barg
Uscita/Outlet:	2" 150RF	Temp. d'eser./Operating temp.:	25 °C
Orifizio/Orifice:	13,3 mm	Area:	1,39 cm²
Taratura/Set Press.:	40 barg	Contropres./Back pressure:	
Quantità/Quantity:	1	Imp.Variabile/Imp.Variable:	
Sigla/Tag:	25-PSV-001E	Generata/Generated:	1 barg

materiale/material

Corpo/Body: A 351 CF8M
Boccaglio/Nozzle: AISI 316L
Otturature/Disc: AISI 316L
Molla/Spring: AISI 316

access.

vern./paint.
CLIENT CYCLE

note

Sovrappressione 10% - Scarto chiusura 7%	Overpressure 10% - Blowdown 7%
Alzata mm. 3,1 - Fluido H2	Lift mm. 3,1 - Fluid H2
Regolazione molla ±5% della taratura.	Spring regulation ±5% of set pressure.

COLLAUDO BANCO DI PROVA
a temperatura ambiente

Hydrostatic Pressure
Corpo/Body 30 bar
Bocc./Nozzle 80 bar

TEST ON BENCH
ambient temperature

Pressione taratura
Set pressure: 40 bar

Strumento utilizzato per la verifica
Pressure gauge: C23-008-07

Taratura,tenuta sede/Set pressure,seat tightness(API 527): POSITIVO/SATISFACTORY

Controllo dimensionale/Dimensional check (IL 42 Procedure): POSITIVO/SATISFACTORY

Ordine n°	Cliente	Ispettore	Ispettore
1724000518 123A90A	ROSETTI MARINO Spa		L. FONTANA ON BEHALF OF ROSETTI MARINO S.p.A ☐ REVIEW ☒ WITNESS
Order n°	Customer	Inspector	Inspector

2024 AGO 08

Mod. Prg. 005 - 01/18

DICHIARAZIONE DI CONFORMITÀ EU *CONFORMITY DECLARATION*

Il fabbricante *The supplier* tecHnical srl dichiara sotto la sua responsabilità che l'accessorio di sicurezza descritto sopra *declares under the sole responsibility that the mentioned safety device*

è conforme alle disposizioni legislative che traspongono *suits the provisions of the law that transposes the* **Directive 2014/68/EU**

MARCATURA - *MARK* CE 0496 Modulo - *Module* H1

CERTIFICATO GARANZIA QUALITÀ TOTALE - FULL QUALITY ASSURANCE CERTIFICATE CE PED. N. 124433-2012-CE-ITA-ACCREDIA

ENTE NOTIFICATO DI SORVEGLIANZA - *NOTIFIED BODY* DNV Business Assurance Italy S.r.l.

NORMATIVE ARMONIZZATE APPLICATE - APPLIED HARMONIZED STANDARDS: EN ISO 4126-1; EN ISO 4126-7

VIGNATE (MI) - ITALY

DATA - *DATE*

2024-ago-08

tecHnical srl

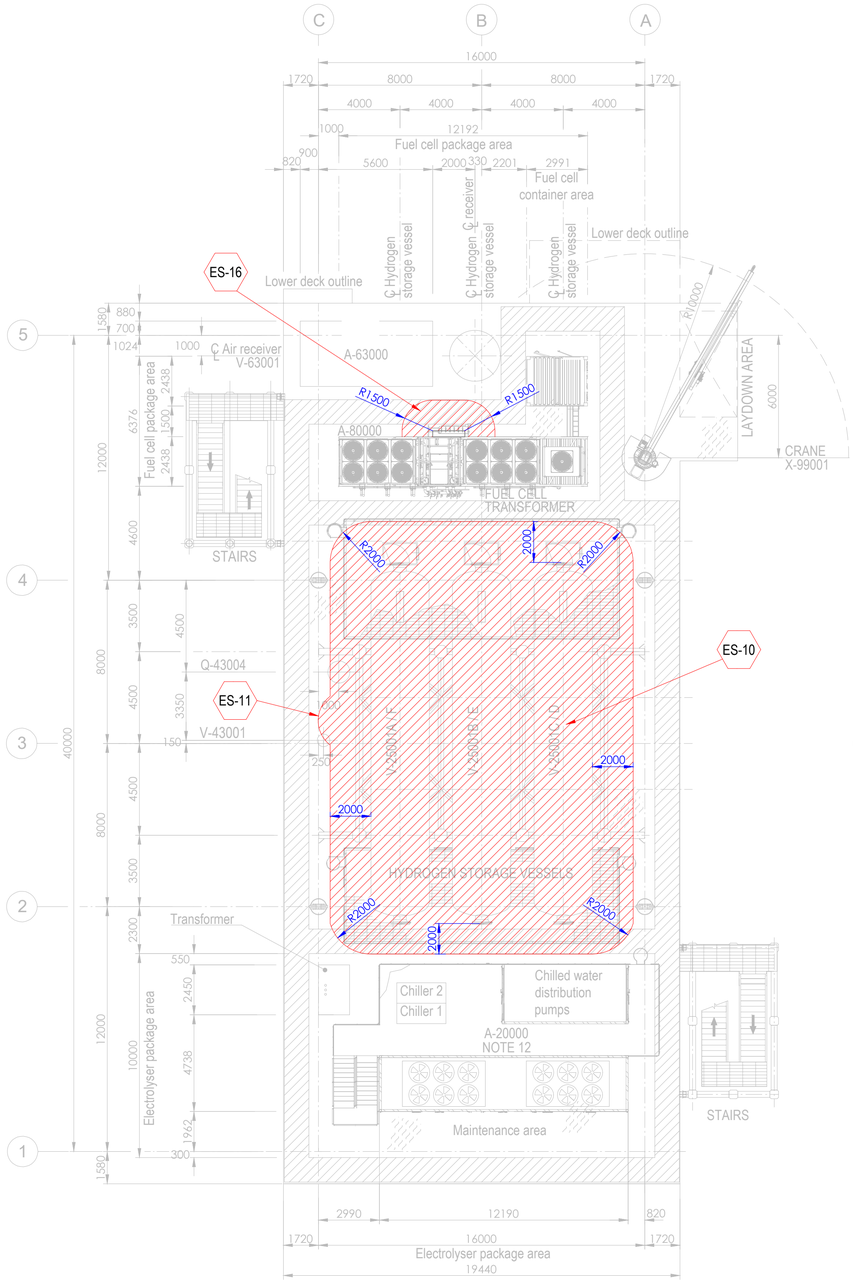
Authorised Representative
Enrica Brenna

tecHnical srl - Sede Legale, Stab. ed Uffici:
Via Toscana, 9 -20052 Vignate (Mi) Italy

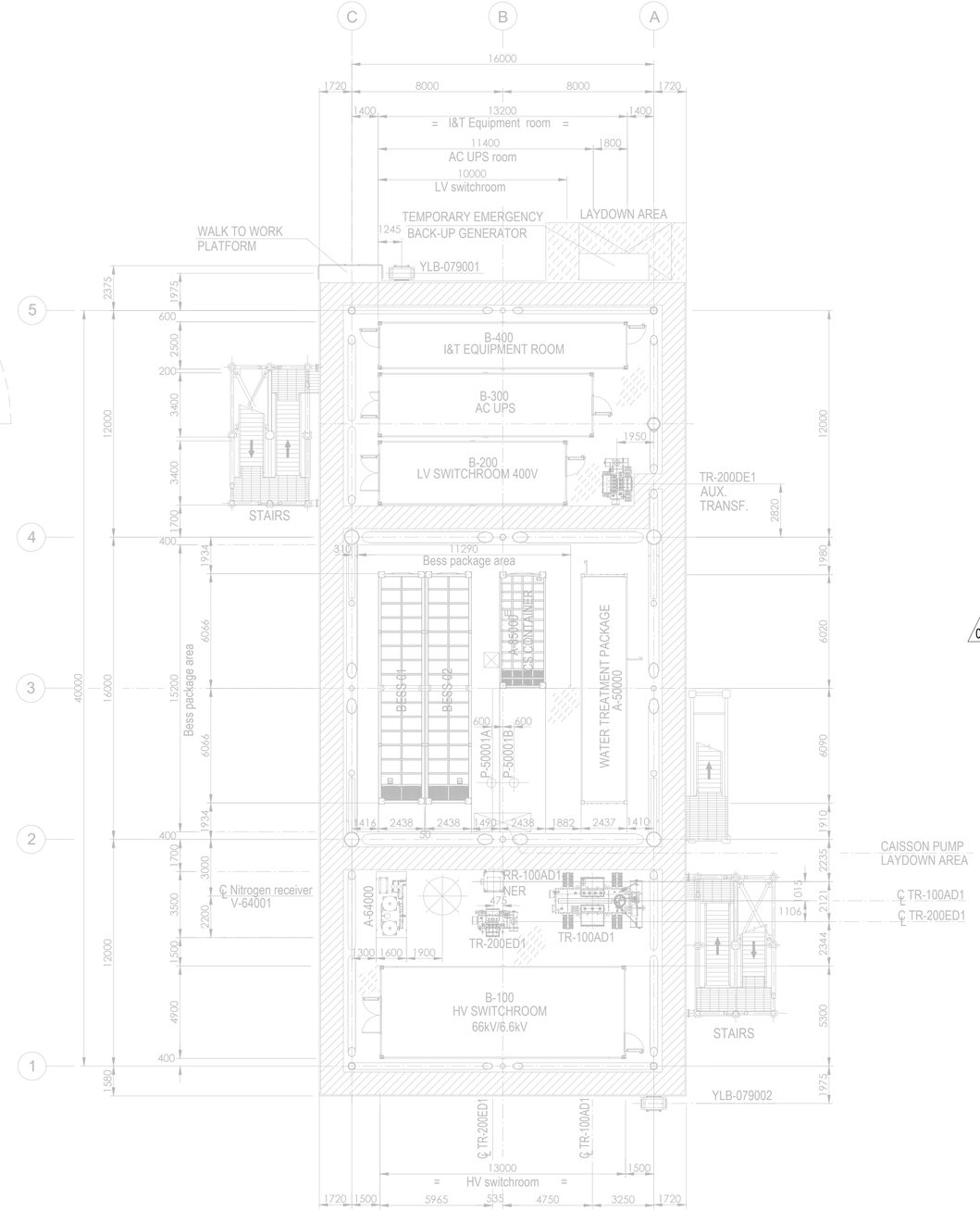
Telefono ++39-0295361240 - Telefax ++39-029560273
E-mail: sales@technical.it - Web site: www.technical.it

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



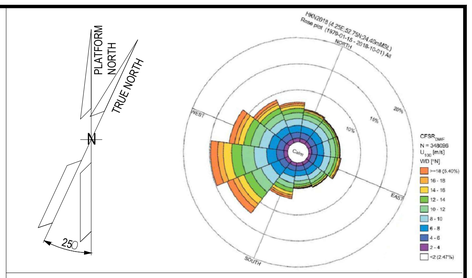
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

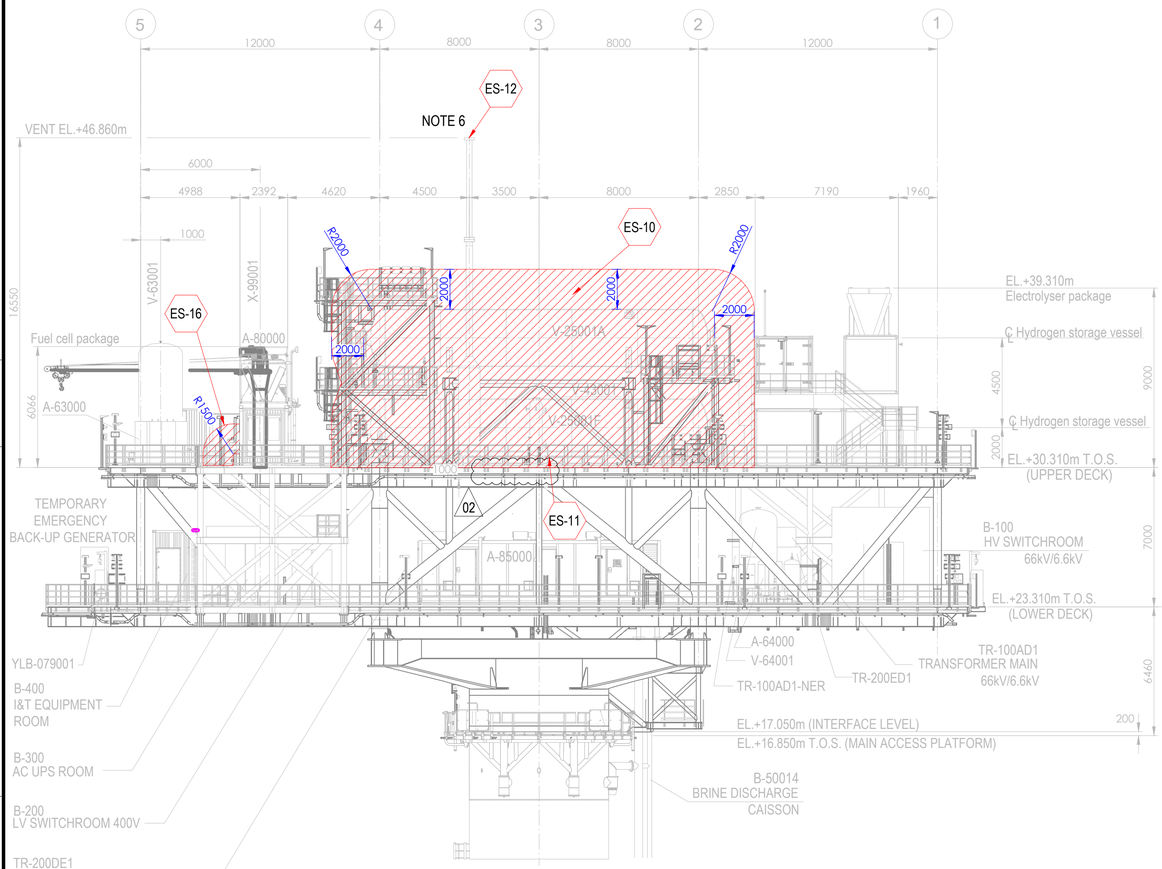
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

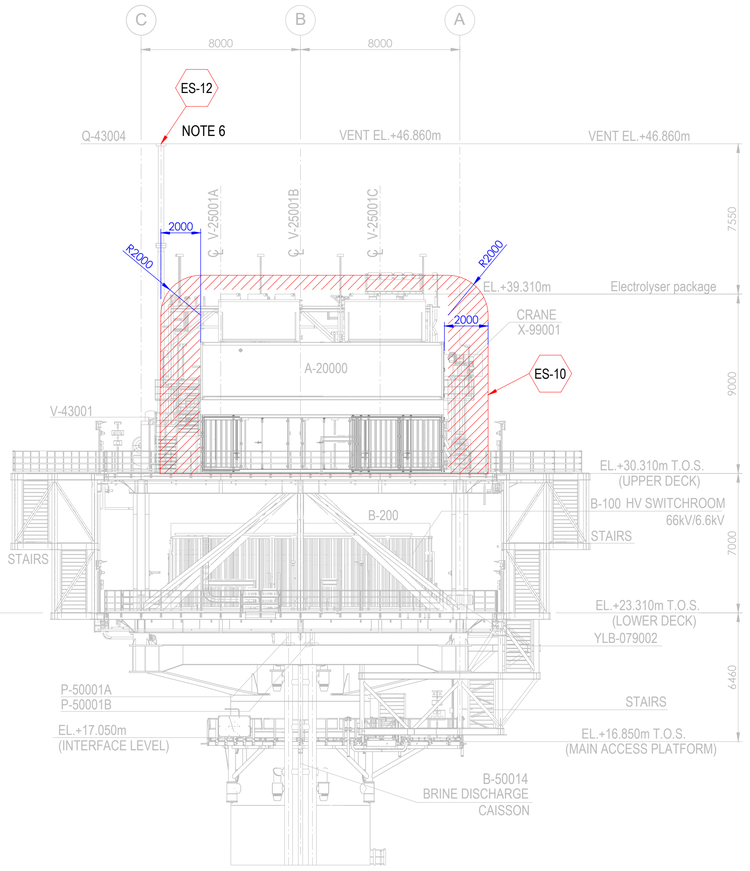
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

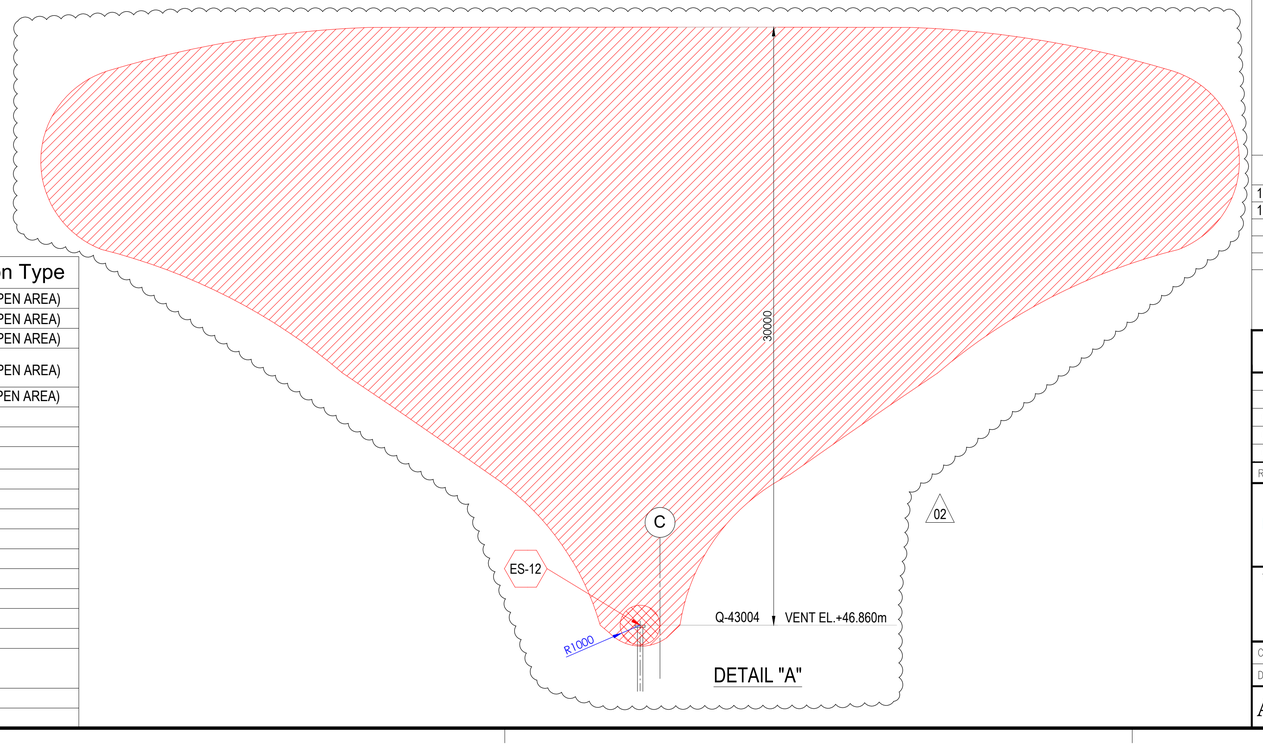


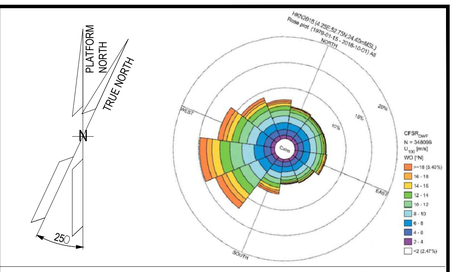
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-FT-038	: Flow Transmitter - Nitrogen to V-25001E Vessel	Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001481	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	06C43100315				
Manufacturer	BROOK INSTRUMENT			**Model**	3809GCA10AGBC3D2C0AC				
Cert No.	DEKRA 13ATEX0086 X			**Equipment Ambient Temp.**	-40°C to +70°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex d	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66/67

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		PL	
	Physical check	x	PL	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-FT-038	: Flow Transmitter - Nitrogen to V-25001E Vessel			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001481	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	PL	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	OK	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-FT-038	: Flow Transmitter - Nitrogen to V-25001E Vessel		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001481	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

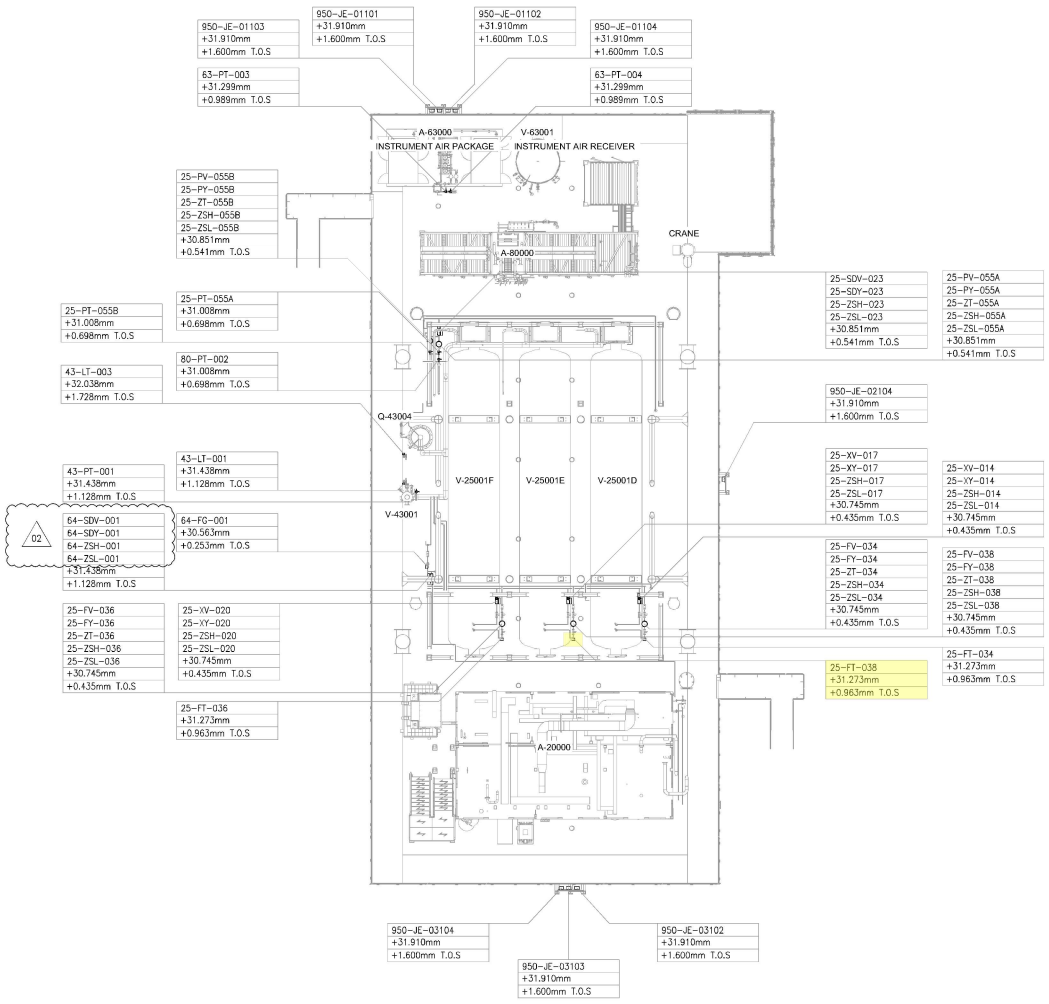
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-23	2025-01-24	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-23T15:39:05.012Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-24T16:56:09.943Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

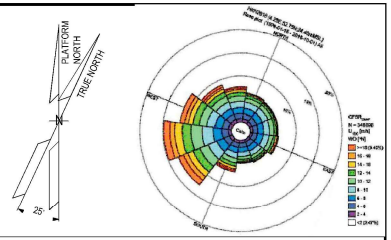
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081		SHEET 001 / REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

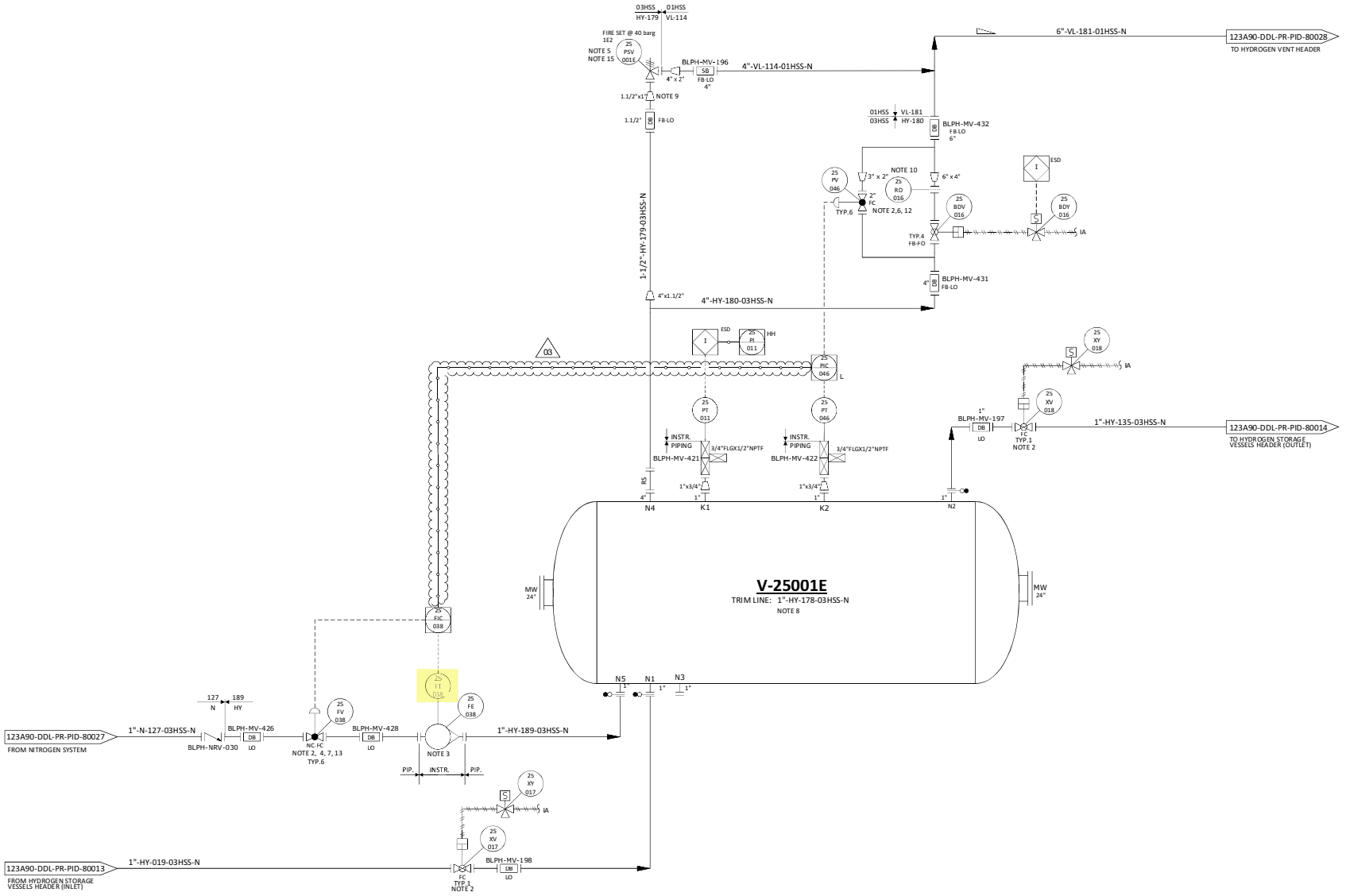
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

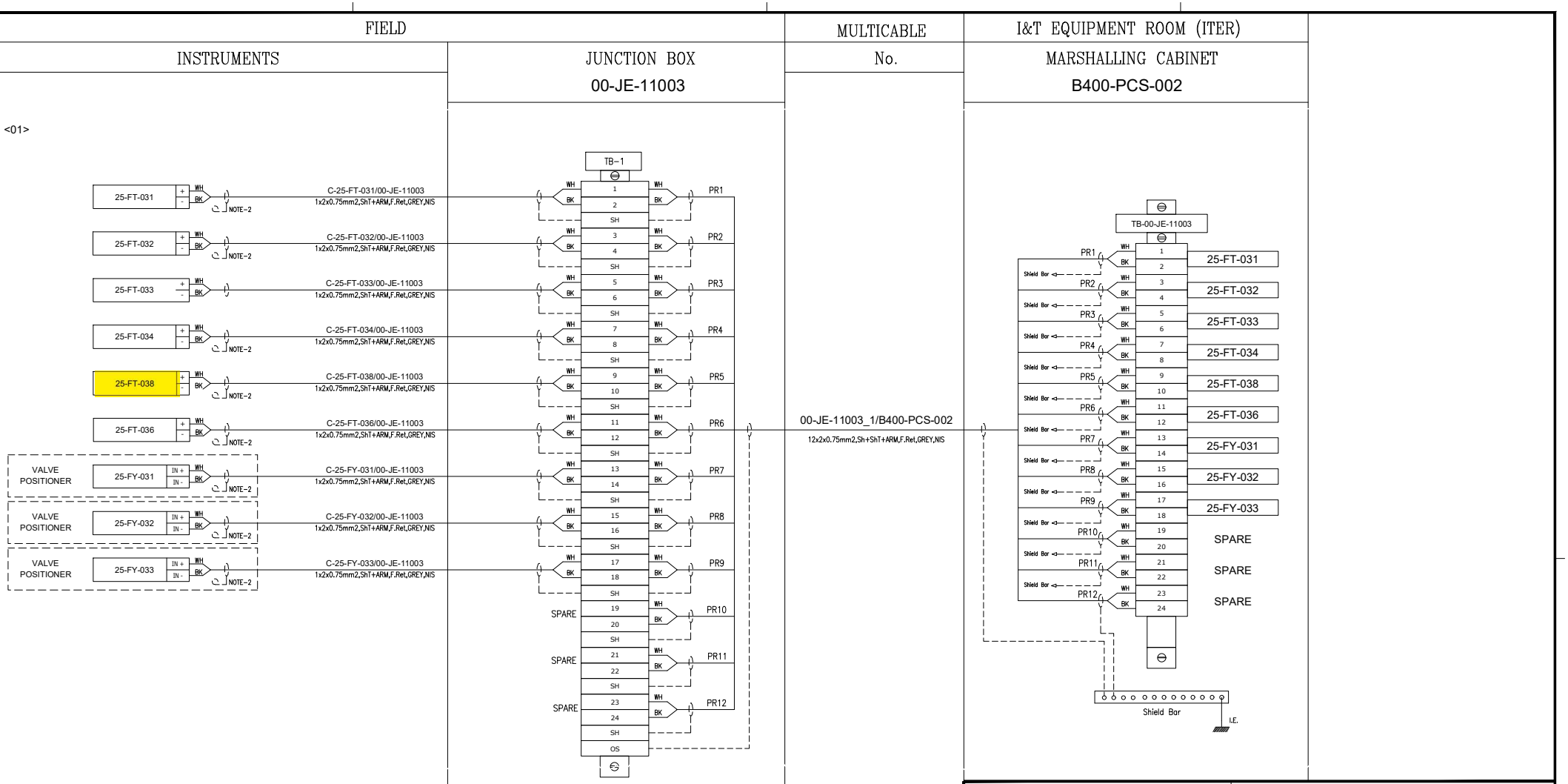
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80019	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40015

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

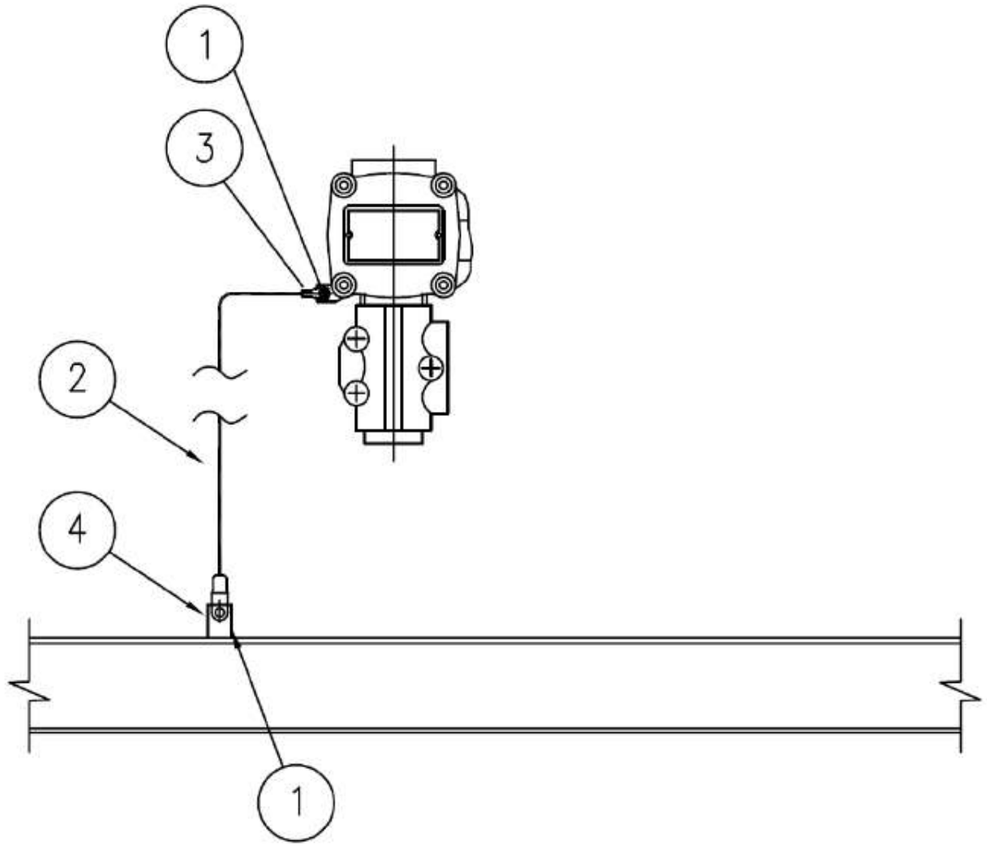
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11003-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 007	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

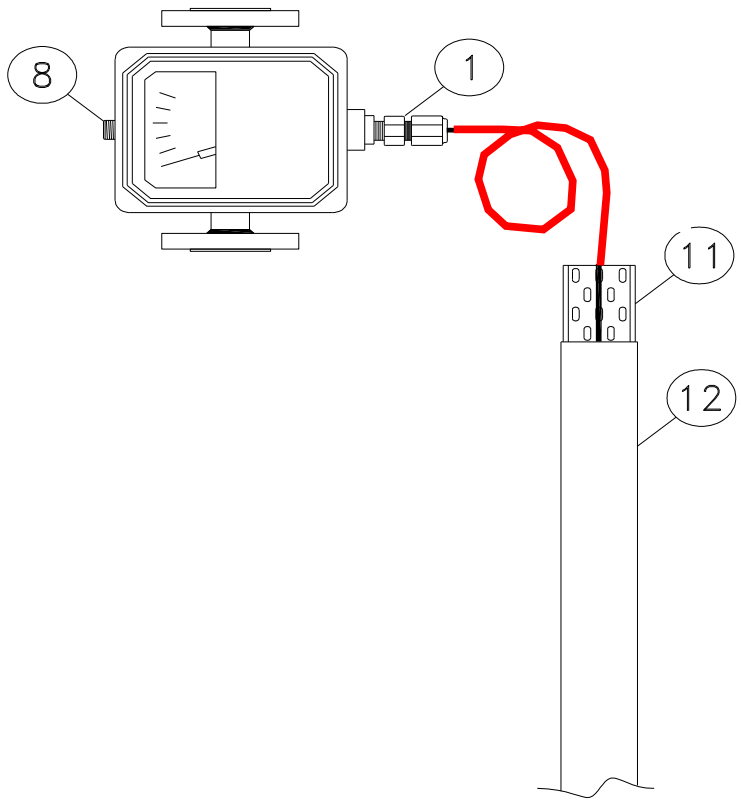
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 12 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR FLOW TRANSMITTERS (ROTAMETERS)



INSTRUMENT TAG	
1	25-FT-031
2	25-FT-032
3	25-FT-033
4	25-FT-034
5	25-FT-036
6	25-FT-038
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10	
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12	
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NOTE:

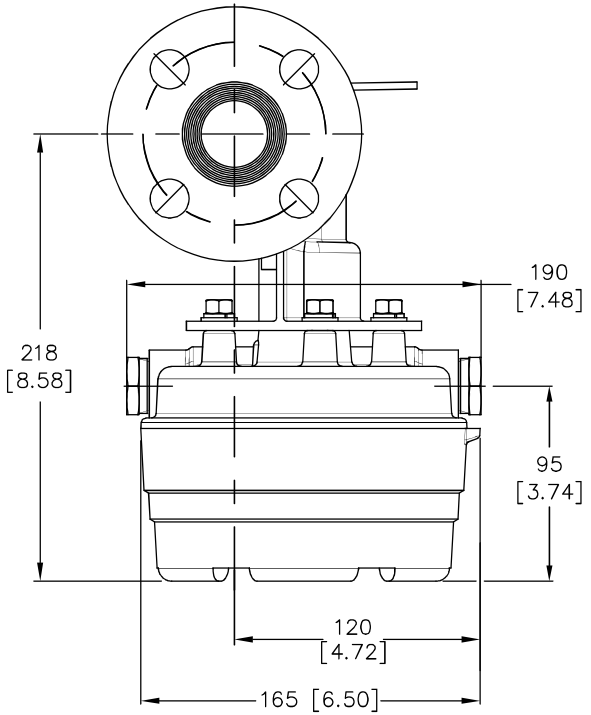
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	1

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Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy



NO	DESCRIPTION	MATERIAL
1	BODY	316/316L SS
2	INDICATOR ASSY	316 SS
3	FLOAT ASSY	316L SS
4	FLANGE	316/316L SS
5	ELECTRICAL CONNECTION	316 SS
6	TAG PLATE / WIRE	316 SS
7	NAMEPLATE	316 SS

METERSIZE: SIZE 10

FLANGE TYPE: 1" ANSI 300 Lbs RF WN

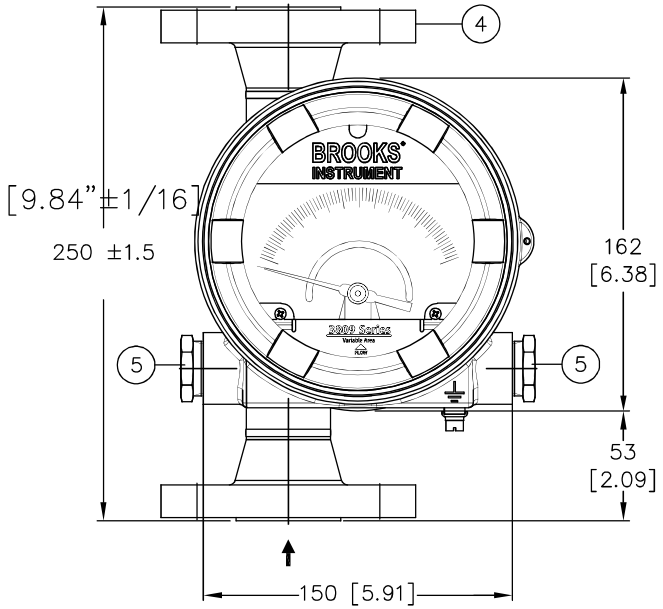
ELECTRICAL CONN.: M20x1.5 (2x)

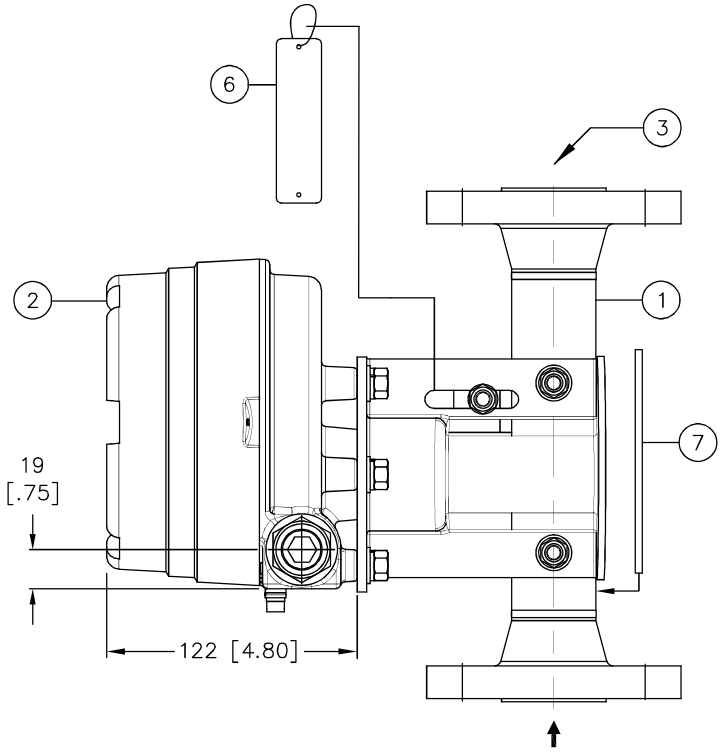
TAG NO: 25-FT-031
25-FT-032
25-FT-033
25-FT-034
25-FT-036
25-FT-038

MODEL NO.: 3809GCA10AGBC3D2C0AC

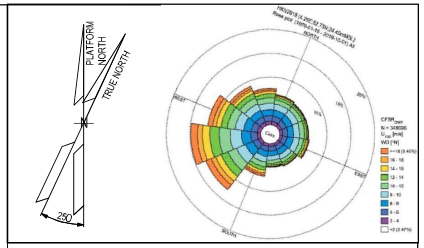
METER RANGE: 6.2 – 62 NM3/H

WEIGHT: APPROX. 12 kg





NOTE: DIMENSIONS IN mm [inch]



NOTES

Straight run of pipe requirements:
There is no straight run of pipe needed.
The meter can be installed immediately before and after a valve or elbow.The recommended tube inside dia is 25.4mm.

Install the flowmeter with the inlet at the bottom and the outlet at the top within 5° of true vertical.

LEGEND

HOLDS

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	19/09/'24	LSZ	KP	KP	ACCEPTED FOR CONSTRUCTION (AFC)
02	19/07/'24	LSZ	KP	KP	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/06/'24	LSZ	KP	KP	ACCEPTED FOR CONSTRUCTION (AFC)
00	15/05/'24	LSZ	KP	KP	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : GENERAL ARRANGEMENT DRAWING
VARIABLE AREA
FLOWMETER

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE NTS

DRAWN LSZ | CHECKED KP | APPROVED KP | DATE 15/05/'24

A1 | DRAWING NO. 1724000791-IN-DA-00003 | SHEET 004 | REV. 03

Document Number: 1724000791-IN-DA-00003

GENERAL	1	Tag Number		25-FE-038 / 25-FT-038	
	2	Service		NITROGEN TO HYDROGEN STORAGE VESSEL (V-25001E	
	3	P & ID No.		123A90-DDL-PR-PID-80020	
	4	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	5	Line No.		1"-HY-190-03HSS-N	
	6	Line Size	Line Schedule	1"	40S
	7	Line Material		ASTM A312 Gr. TP316/316L	
PROCESS CONDITIONS	8	Fluid		NITROGEN	
	9			Units / @ Max. Flow / @ Norm. Flow / @ Min. Flow	
	10	Flow		Nm^3/hr / / 40 /	
	11	Temperature		°C / / 15 /	
	12	Pressure		barg / / 0 - 3 /	
	13	Max Velocity		5 - 21 m/sec	
	14	Fluid Conductivity	Min.	0.021 kcal/hr m K	
	15	Vacuum Possibility		NO	
	16	Ambient Temperature (min/norm/max)		-8.4 / 10.5 / 25 [°C]	
	17				
METERING ELEMENT	18				
	19				
	20	Connection Size	Type & Rating	1"	Flanged #300 RF
	21	Connection Materials		SS 316/316L Dual Cert.	
	22	Float Type		SELF-CLEANING	
	23	Float Material		SS 316L	
	24	Meter Casing		SS 316/316L Dual Cert.	
	25	Meter Scale Type	Meter Factor	-	-
	26	Meter Scale Range		6.2 - 62 Nm^3/h	
	27				
	28				
ASSOCIATED INSTRUMENT	29	Tag No.		25-FT-001 (3) - Housing in AISI 316	
	30	Function		Flow Transmitter	
	31	Mounting		INTEGRAL with LCD/Engineering Unit	
	32	Electrical Connection	Electrical Class	N. 2 M20x1.5mm	-
	33	Signal Cable Length		-	
	34	ATEX Certification	Ingress Protection	II 2 G Ex db IIC T6…T1 Gb	IP66
	35	Power Supply		Loop powerd	
	36	Output		4-20mA, HART	
	37	Accuracy	Repeatability	+/- 1 % F.S.	-
	38	Rangeability		10:1	
	39	Alarm Contact: No.	Form	-	-
	40	Alarm Contact: Rating		-	
	41	Alarm Contact: Action		-	
	42	SIL Certification	PED Certification	-	Required (8)
PURCHASE	43	Manufacturer		BROOKS INSTRUMENT	
	44	Model		3809GCA10AGBC3D2C0AC	
	45	Purchase Order Number		1724000791	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VB	LC	DL	Accepted for Construction (AFC)
01	29/08/2024	VB	LC	DL	Accepted for Construction (AFC)
00	23/02/2024	VB	LC	DL	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

Variable Area Flow Meter

CROSSWIND

ROSETTI MARINO

Sheet 10 of 11

Code : 301 | Dwg. No.: 123A90-DDL-IN-DS-40045 | Rev 02

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
00-JE-11001	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11002	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-11003	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-11004	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11005	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12001	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12002	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12003	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12004	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12005	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12006	PCS Digital Input JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13001	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13002	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-13003	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa		CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-21001	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87929	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-21002	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-22001	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87933	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-22002	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87934	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-23001	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-23002	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
25-BDV-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDV-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDV-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-BDY-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDY-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDY-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-FT-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FT-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-FT-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-FT-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FV-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FV-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FV-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FV-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FV-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FV-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FY-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407	II 2G	ATEX - SN 2400583	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FY-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407	II 2G	ATEX - SN 2400584	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FY-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407	II 2G	ATEX - SN 2400585	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FY-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407	II 2G	ATEX - SN 2400586	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FY-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407	II 2G	ATEX - SN 2400587	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FY-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407	II 2G	ATEX - SN 2400588	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-031	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **DEKRA 13ATEX0086 X** Issue Number: **6**

(4) Product: **Variable Area Flowmeter MT3809G Series**

(5) Manufacturer: **Brooks Instrument, LLC.**

(6) Address: **407 West Vine Street, Hatfield, PA 19440, USA**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number NL/DEK/ExTR13.0026/05.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0 : 2018 **EN 60079-1 : 2014** **EN 60079-11 : 2012**
EN 60079-31 : 2014

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 1 G Ex ia IIC T6...T2 Ga
II 2 G Ex ia IIC T6...T2 Gb
II 2 G Ex db IIC T6...T1 Gb
II 2 D Ex ia IIIC T85 °C...T300 °C Db
II 2 D Ex tb IIIC T85 °C...T450 °C Db

Date of certification: 25 May 2023

DEKRA Certification B.V.

R. Schuller
Certification Manager

PRODUCTS RvAC 001

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(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 13ATEX0086 X** Issue No. **6**

(15) **Description**

Variable Area Flowmeters of the MT3809G Series measure flow, based on the variable area principle. The flow meter consists of a stainless enclosure with windowed cover in type of protection Ex db, Ex ia, or Ex tb or alternatively of an aluminium enclosure with windowed cover in type of protection Ex ia.

The flow raises a float in a tapered tube increasing the area for the passage of flow. The float assumes distinct positions for every constant rate flow. Flow rate indication is provided by means of magnetic coupling. A magnet encapsulated in the float is coupled to a rotatable magnet located in the rear of the indicator, turning the dial indicator mounted on the meter.

A flow transmitter with communication interfaces and/or optional limit switches in may be mounted with the flow meter in the same enclosure.

For nomenclature, thermal data, product ratings and electrical data see Annex 1 to report NL/DEK/ExTR13.0026/05.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. NL/DEK/ExTR13.0026/05.

(17) **Specific conditions of use**

For approval type A and B (Ex ia):
For applications requiring EPL Gb (Category 2 G), the transparent cover must be installed such, that ignition sources due to electrostatic discharge sparks are prevented.

For application in environments requiring EPL Ga and the enclosure is made of aluminum, it shall be installed in such a way that sparking as a result of impact or friction is excluded.

For applications requiring EPL Db (Category 2 D), the transparent cover and the painted parts must be installed such, that danger of ignition due to propagating brush discharges is prevented.

For models marked with material code M, Titanium Grade II, the installation instructions contain the specification of the alloy, allowing the user determine the suitability of the equipment for the particular application.

From the safety point of view the circuits shall be assumed to be connected to earth.

On units with a digital display, the programming function shall only be performed in a non-hazardous area.

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 13ATEX0086 X** Issue No. **6**

(17) For approval type C (Ex db and Ex tb):
For applications requiring EPL Gb (Category 2 G), the threaded entries of the enclosure shall be sealed with plugs, cable entry devices such as glands or conduit entry devices which are Ex db IIC Gb approved.

For applications requiring EPL Db (Category 2 D), the threaded entries of the enclosure shall be sealed with plugs, cable entry devices such as glands or conduit entry devices which are Ex tb IIIC Db approved.

For information regarding the dimensions of the flameproof joints the manufacturer shall be contacted.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19) **Test documentation**

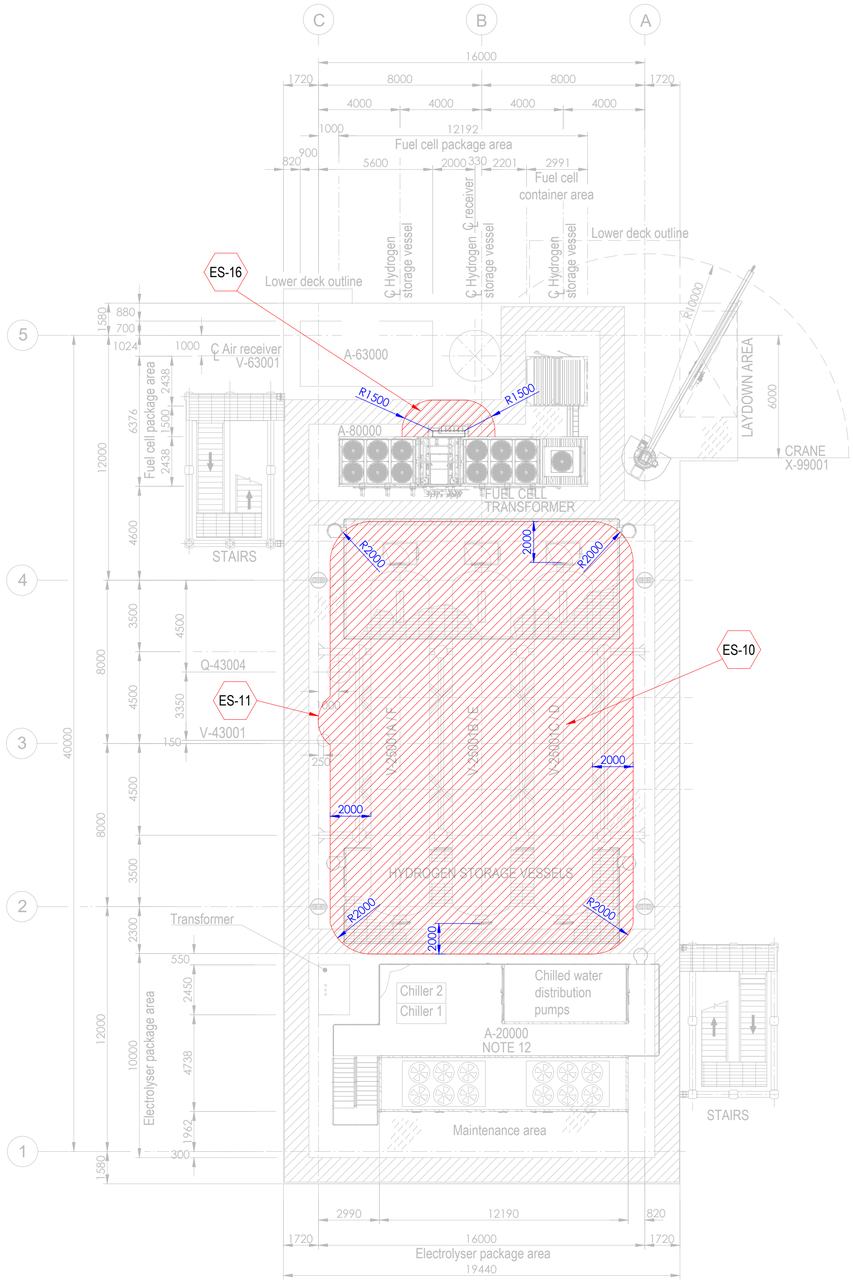
As listed in Report No. NL/DEK/ExTR13.0026/05.

(20) **Certificate history**

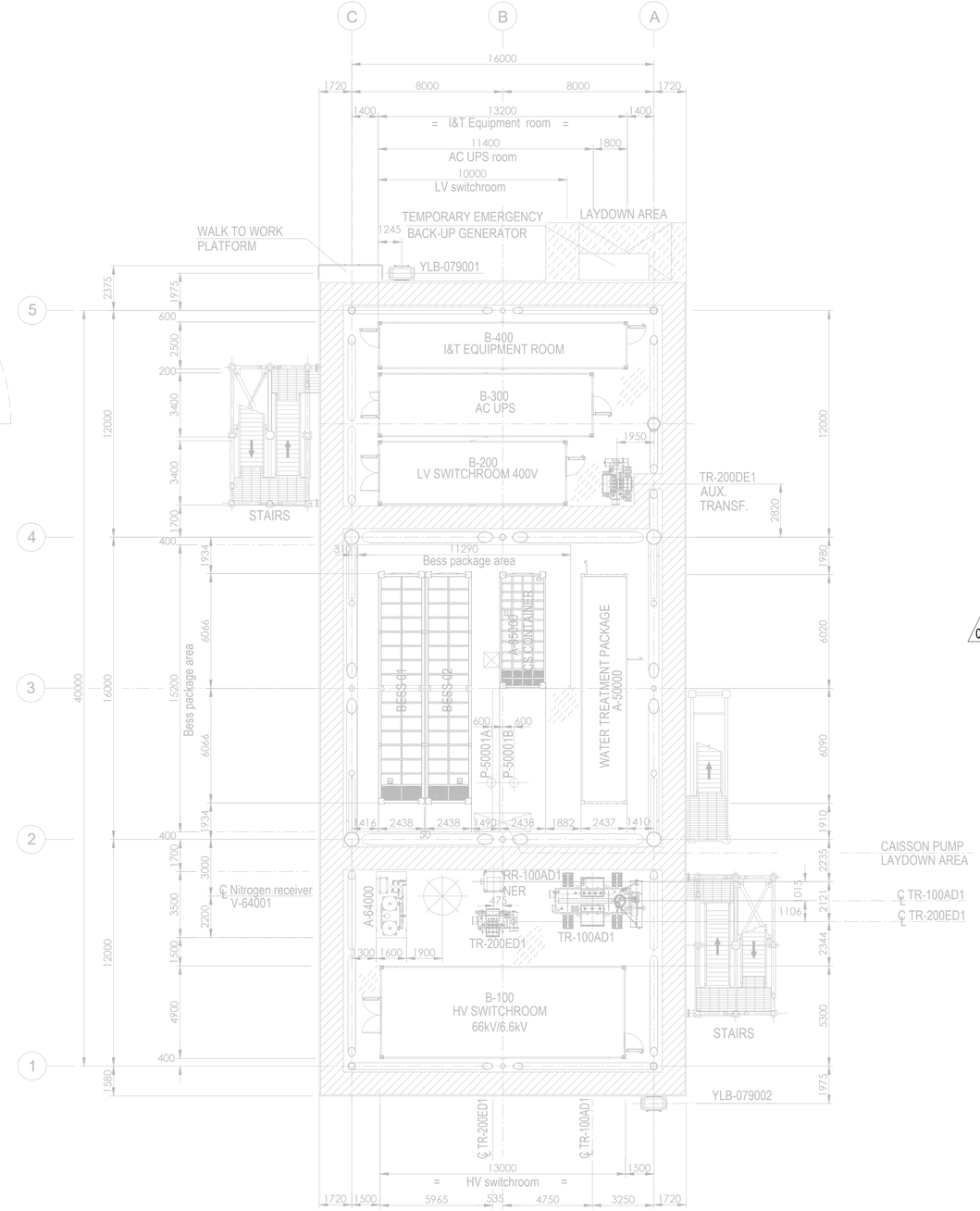
Issue 1 -	215864200	Initial certificate;
Issue 2 -	218494200	Assessment to the latest editions of the standards, Addition of Type of Protection Ex ia and tc, Addition of a transmitter model
Issue 3 -	218494200	Add type of protection Ex ic, Specific Conditions of Use updated, Corrected terminal no's in Annex 1
Issue 4 -	328890200	Assessment to latest EN IEC 60079-0, Category 3 removed, Specific Conditions of Use updated and minor constructional changes
Issue 5 -	383146800	Update of barrier entity parameters for 4-20mA option only.
Issue 6 -	383404800	Minor changes to the construction

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



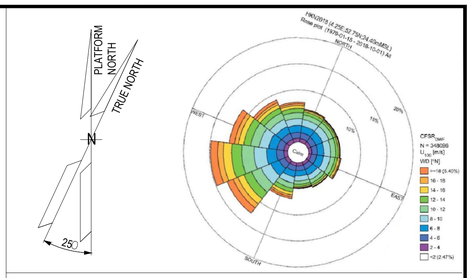
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

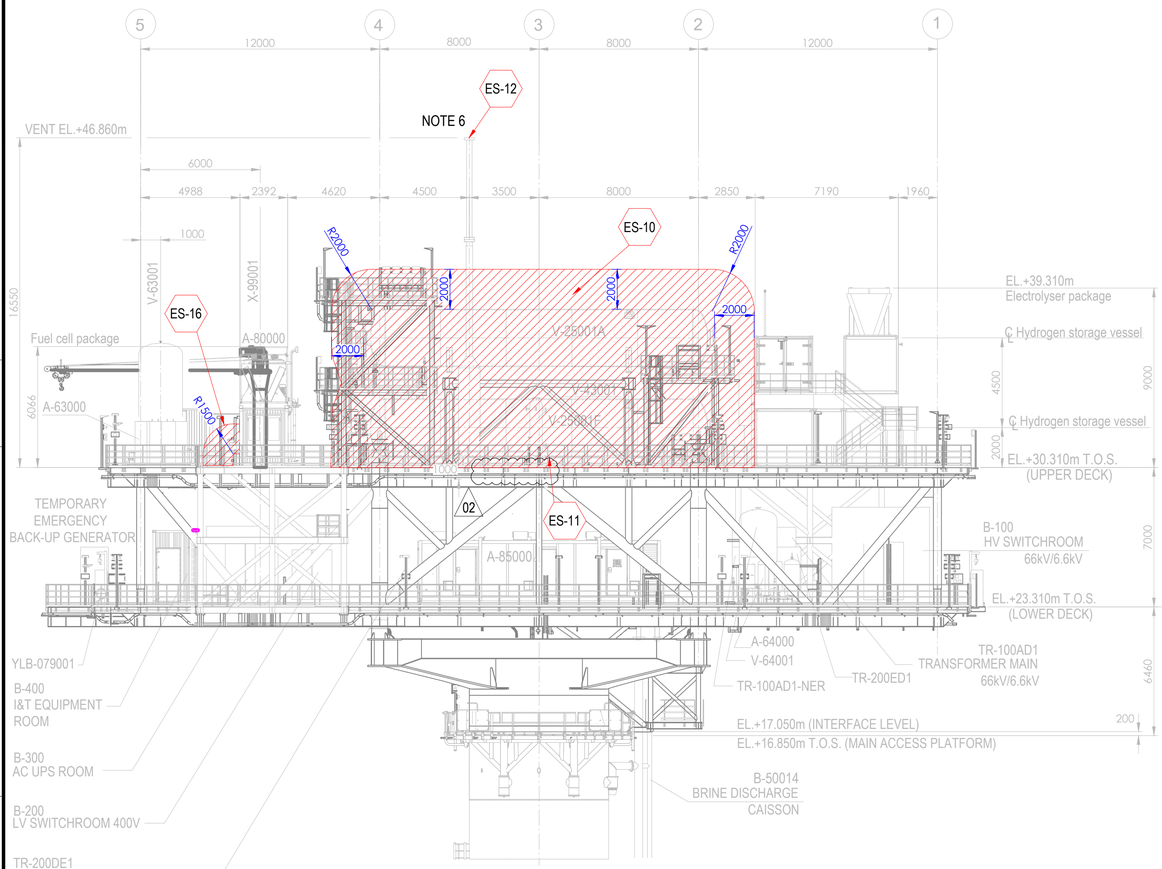
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

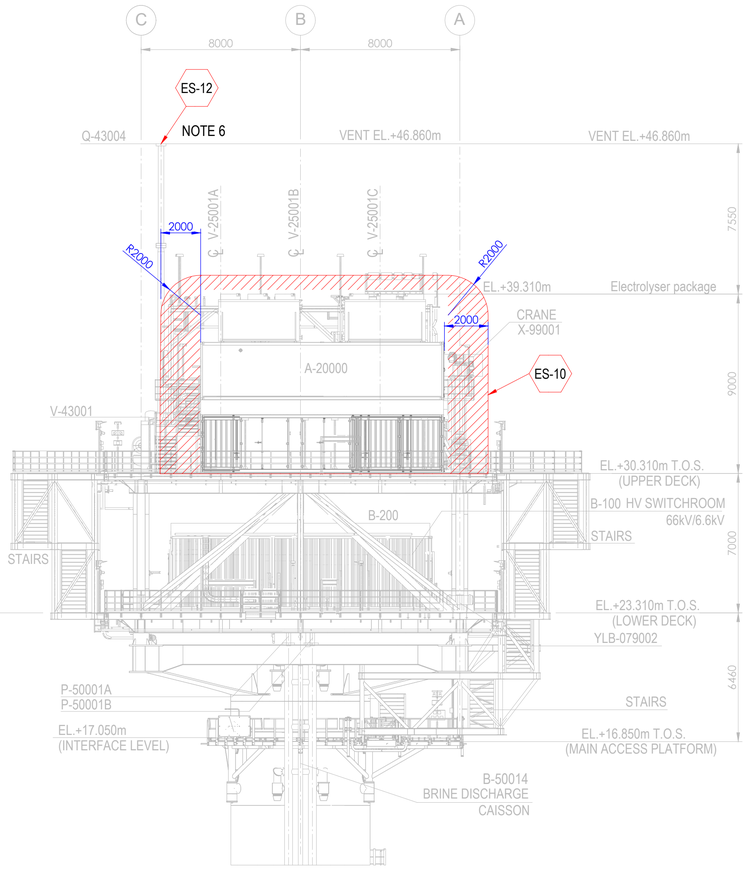
File Name : 123A90-DDL-SAF-DL-30022 Rev.02

DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

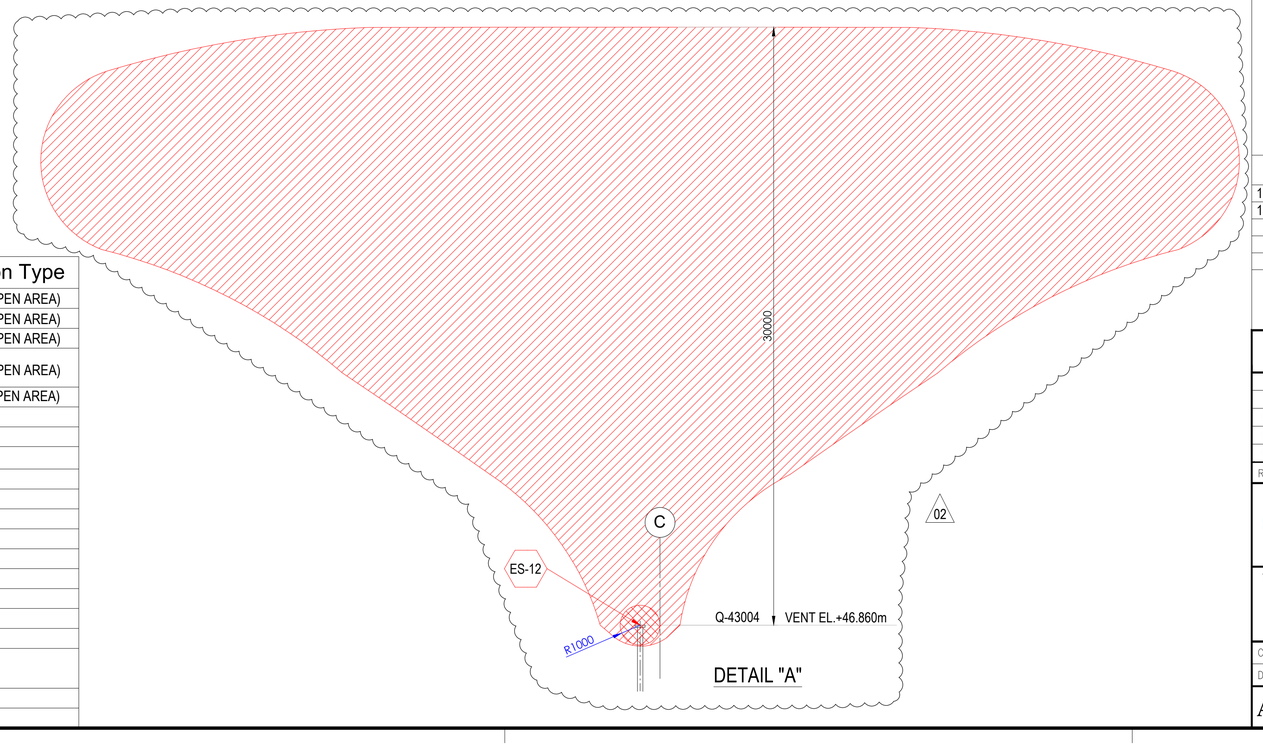


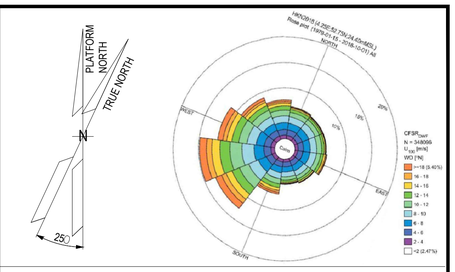
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PT-011	: Pressure Transmitter - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80016		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10001488	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		SE240644			
Manufacturer	Terranova Srl			**Model**		SST76 + MAN2-R6			
Cert No.	TI17ATEX304X - TI17ATEX304X/1			**Equipment Ambient Temp.**		-40°C to +60°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	PL	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PT-011	: Pressure Transmitter - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001488		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	25-PT-011	: Pressure Transmitter - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001488	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline ATEX	Form CJX01		Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

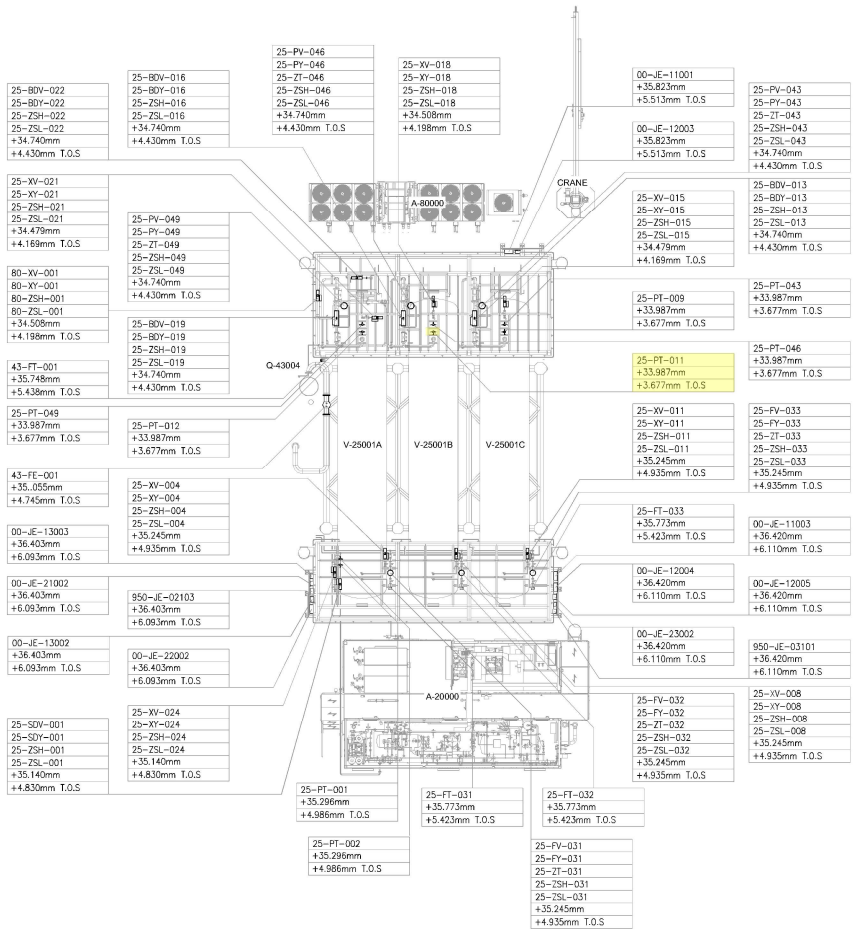
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-13	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-13T12:24:11.997Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-18T15:37:02.763Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

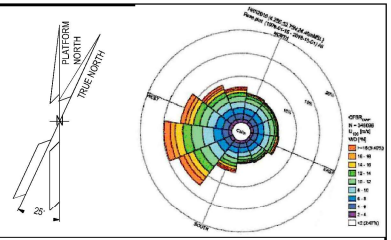
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

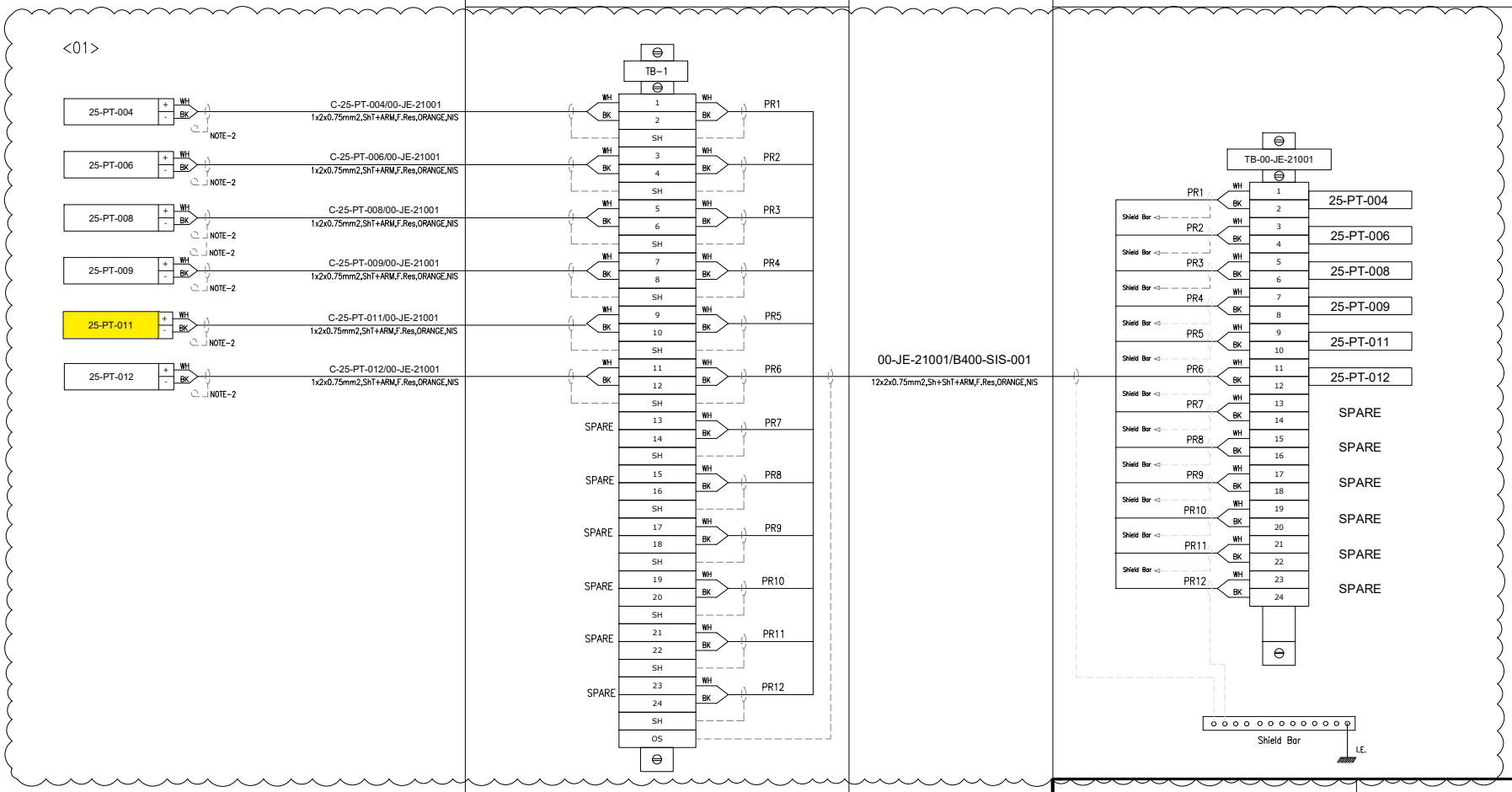
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40016 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-21001	No.	MARSHALLING CABINET B400-SIS-001



CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT– SAFETY SYSTEM WIRING DIAGRAMS
00–JE–21001

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

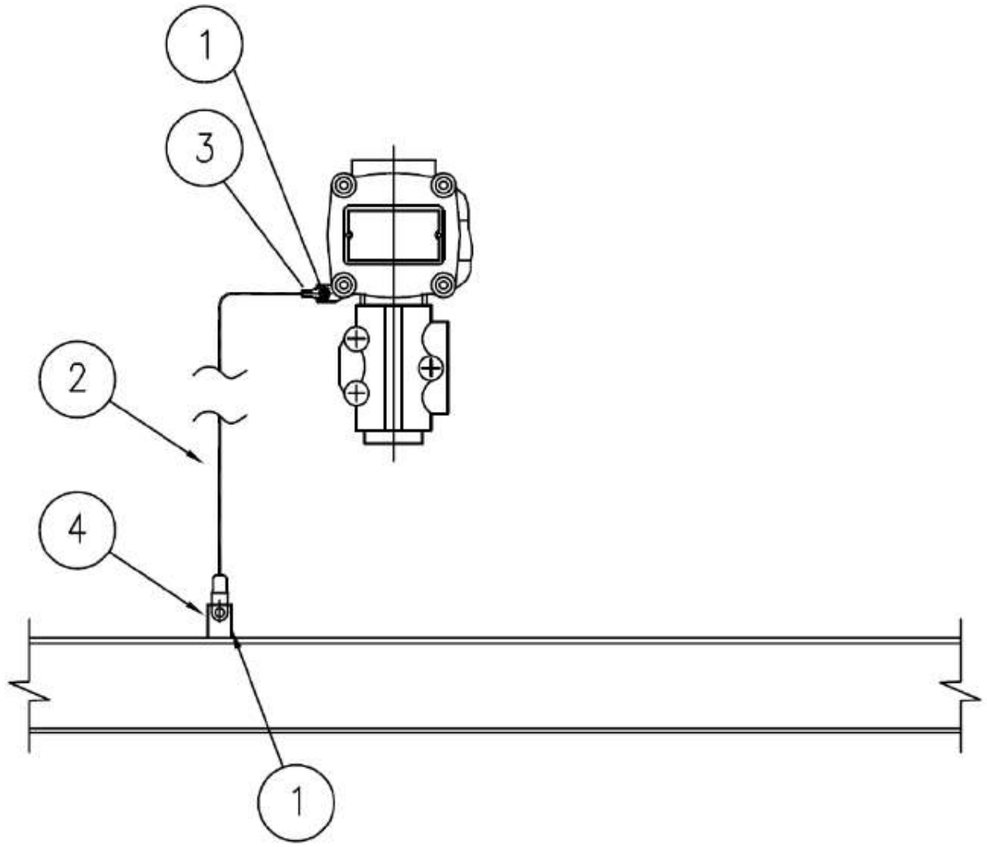
ROSETTI MARINO SpA

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40016	005	01

File Name : 123A90-DDL-IN-DG-40016_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DD-20090
REV.: 2_I | DATE: 07/11/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

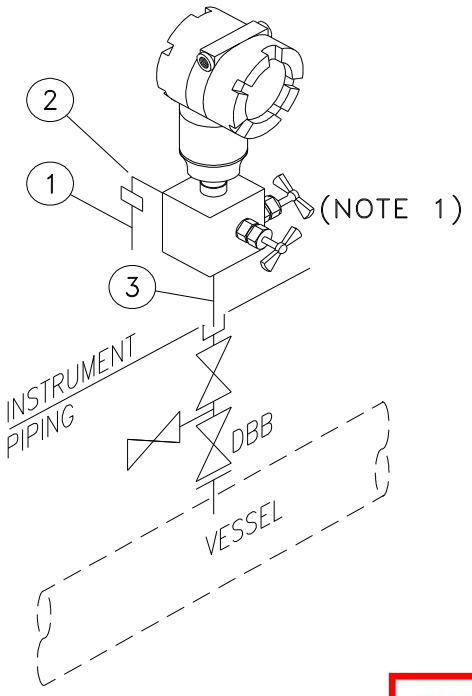
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

PRESSURE TRANSMITTERS - Installation for Gas Service



	INSTRUMENT TAG
1	25-PT-004
2	25-PT-006
3	25-PT-008
4	25-PT-009
5	25-PT-011
6	25-PT-012
7	25-PT-035
8	25-PT-037
9	25-PT-040
10	25-PT-043
11	25-PT-046
12	25-PT-049
13	25-PT-001
14	25-PT-002
15	25-PT-055A
16	25-PT-055B
17	43-PT-001
18	50-PT-014
19	63-PT-003
20	63-PT-004
21	~~64-PT-031A~~
22	64-PT-031B
23	64-PT-002
24	80-PT-002
25	
26	
27	
28	
29	
30	

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40077**

REV.:	DATE:	SIGNATURE:
2_B	17/01/25	G.Randi

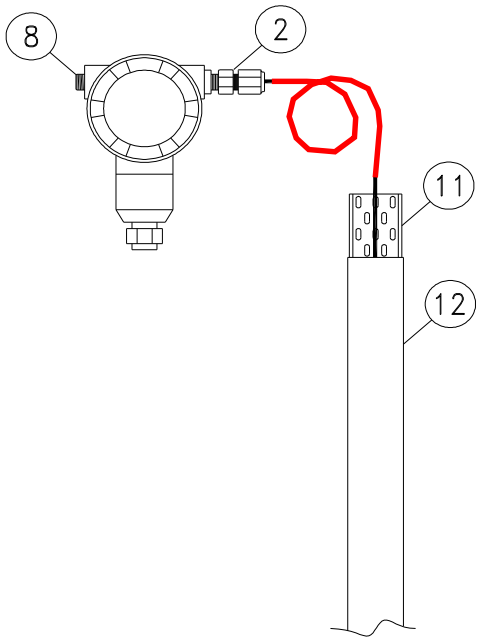
ROSETTI MARINO SpA

NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT.
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
3		SS316 NIPPLE	1/2" NPT L=100mm	N. 1
2		ELBOW SS316	1/4" NPT-M x 1/2" O.D	N. 1
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	m 0.5

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ELECTRICAL HOOK-UP FOR PRESSURE TRANSMITTERS



	INSTRUMENT TAG
1	25-PT-002
2	25-PT-004
3	25-PT-006
4	25-PT-008
5	25-PT-009
6	25-PT-011
7	25-PT-012
8	63-PT-004
9	64-PT-002
10	80-PT-002
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	1

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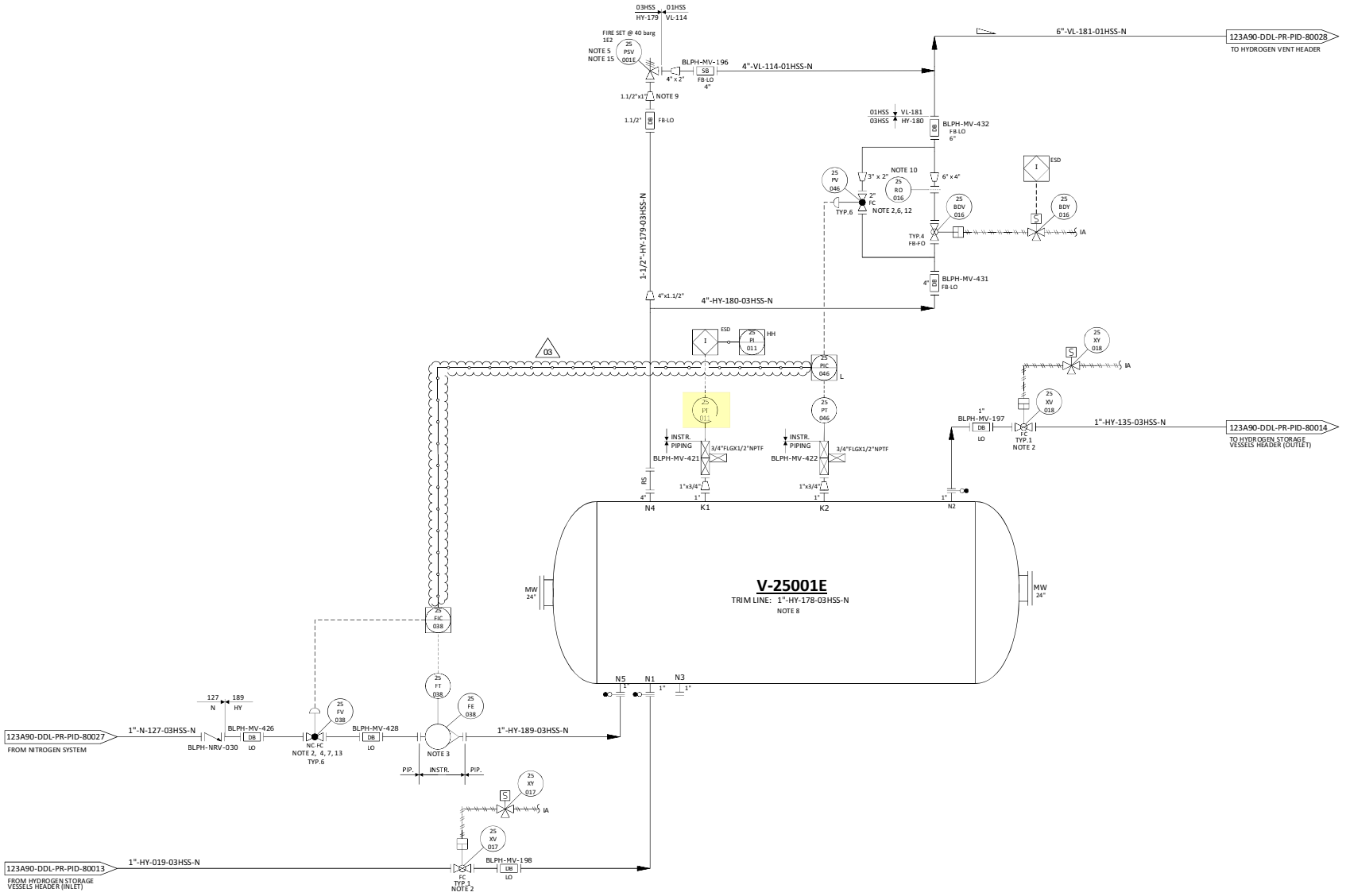
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

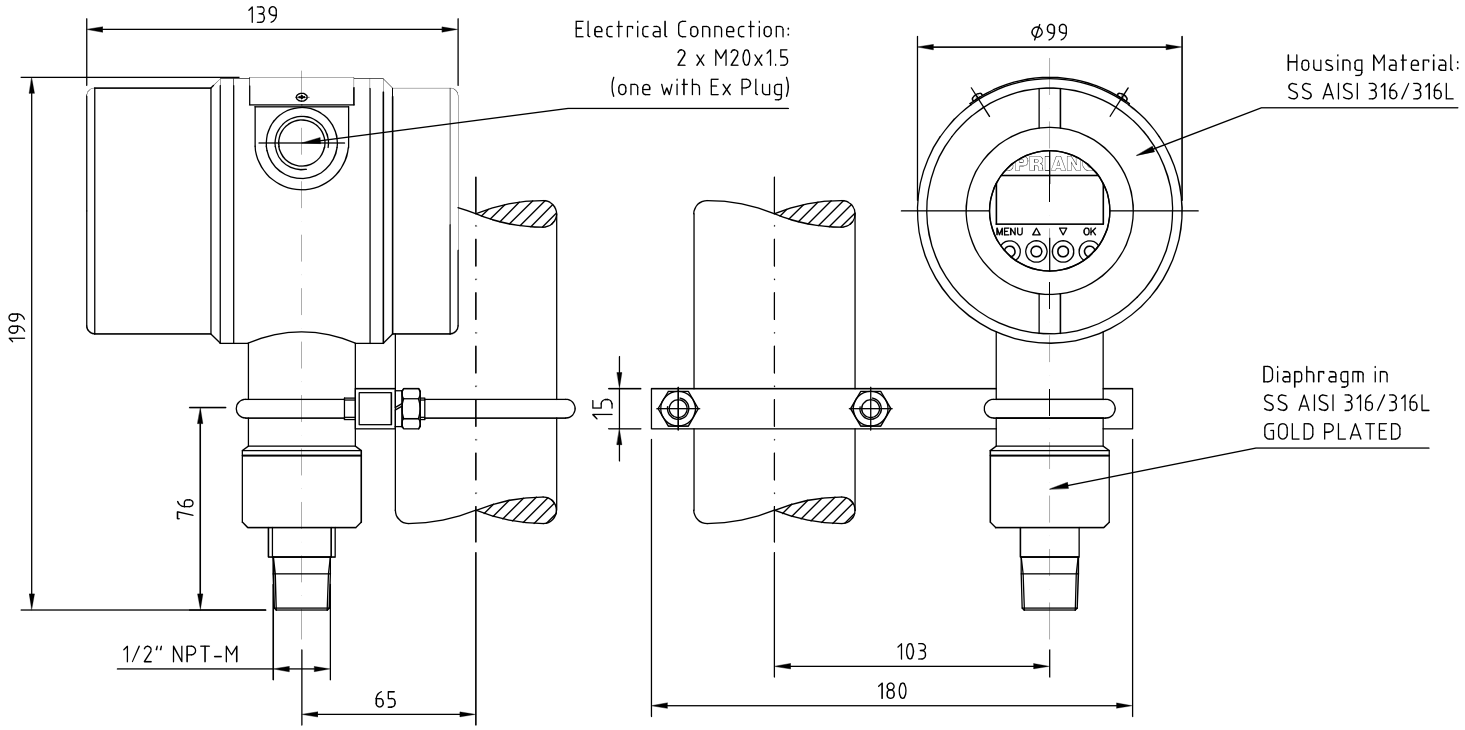
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME

SST76 PRESSURE TRANSMITTERS

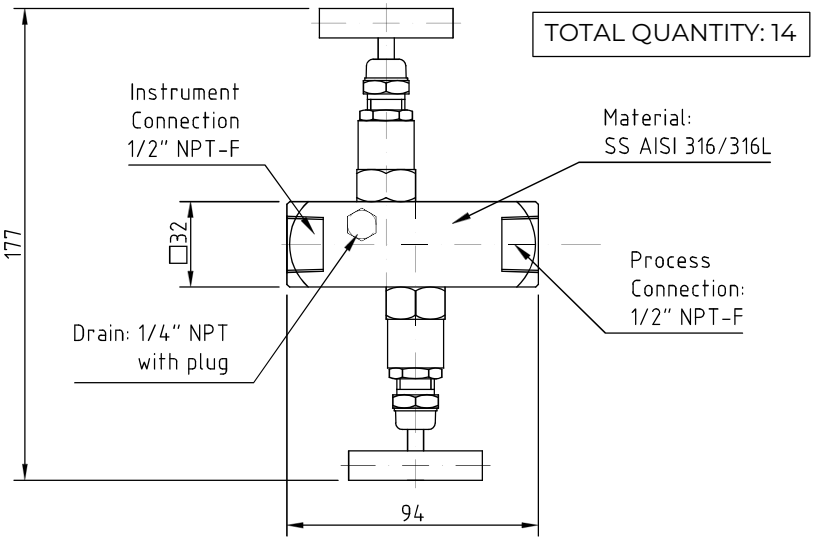


TAG LIST

#	TAG	RANGE	CALIBRATION
1	25-PT-001	0 ÷ 100 barg	0 ÷ 40 barg
2	25-PT-002	0 ÷ 100 barg	0 ÷ 40 barg
3	25-PT-004	0 ÷ 100 barg	0 ÷ 40 barg
4	25-PT-035	0 ÷ 100 barg	0 ÷ 40 barg
5	25-PT-006	0 ÷ 100 barg	0 ÷ 40 barg
6	25-PT-037	0 ÷ 100 barg	0 ÷ 40 barg
7	25-PT-008	0 ÷ 100 barg	0 ÷ 40 barg
8	25-PT-040	0 ÷ 100 barg	0 ÷ 40 barg
9	25-PT-009	0 ÷ 100 barg	0 ÷ 40 barg
10	25-PT-043	0 ÷ 100 barg	0 ÷ 40 barg
11	25-PT-011	0 ÷ 100 barg	0 ÷ 40 barg
12	25-PT-046	0 ÷ 100 barg	0 ÷ 40 barg
13	25-PT-012	0 ÷ 100 barg	0 ÷ 40 barg
14	25-PT-049	0 ÷ 100 barg	0 ÷ 40 barg

TOTAL QUANTITY: 14

MAN2-R6 TWO WAYS AND TWO VALVES MANIFOLD



NOTES

SST76 PRESSURE TRANSMITTERS
SST76-H-7-L-2-9-2-1-4 + MAN2-R6

H - OUTPUT: 4-20 mA + HART
7 - PROCESS CONNECTION: 1/2" NPT M;
L - NOMINAL RANGE: 0 ÷ 100 barg
2 - CALIBRATION: 0 ÷ 40 barg
9 - DIAPHRAGM MATERIAL: SS AISI 316/316L GOLD PLATED
2 - OPTIONS: HOUSING MATERIAL STAINLESS STEEL WITH ELECTRICAL CONNECTIONS 2 x 1/2" NPT-F
1 - OPTIONS: MOUNTING BRACKET FOR 2" PIPE MOUNTING
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1G Ex ia IIC T6/T5/T4 Ga

to be coupled with:
1. MAN2-R6 TWO VALVES AND TWO WAYS MANIFOLD, MATERIAL SS AISI 316/316L, CONNECTION TO INSTRUMENT 1/2" NPT-F, PROCESS CONNECTION 1/2" NPT-F.

NOTES:
1. OVERALL ACCURACY OF PT (COMPREHENSIVE OF HYSTERESIS, NON-LINEARITY, REPEATABILITY) IS WITHIN +/- 0,07% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS NAMEPLATE;
3. FILLING OF ELEMENT IS FORESEEN WITH DOW CORNING SILICONIC OIL;
4. ELECTRICAL CONNECTION ARE: 2 X 1/2" NPT-F (ONE PLUGGED);
5. INTEGRAL LCD /CONFIGURABLE ENGINEERING UNITS;
6. INGRESS PROTECTION EN 60529: IP66;
7. HOUSING MATERIAL STAINLESS STEEL;
8. ALL INSTRUMENT ARE SIL2/SIL3 CERTIFIED;
9. HART 6.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDROTEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abolini	G. Abolini	S. Valletti
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abolini	G. Abolini	S. Valletti
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abolini	G. Abolini	S. Valletti
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sassi	G. Abolini	G. Abolini	S. Valletti

CROSSWIND ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:2

TERRANOVA

TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB: 4718_OS | SHEET No. 4 OF 10 | REV. 03

GENERAL	1	Tag Number			25-PT-011	
	2	Service			HYDROGEN STORAGE VESSEL (V-25001E)	
	3	P&ID Number	Location		123A90-DDL-PR-PID-80019	V-25001E
	4	Function			PRESSURE MEASUREMENT	
	5	Mounting			DIRECT ON-LINE	
	6	Area Classification			ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature			Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid			HYDROGEN	
	9	Pressure Des.	Oper.	[barg]	40	30
	10	Temperature Des.	Oper.	[°C]	-10 / + 80 °C	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity		-	-
	12	Flow Rate	Allowable Temp.		-	-
TRANSMITTER	13	Instrument Range Min.	Max.	[barg]	0	100
	14	Calibration Range Min.	Max.	[barg]	0	40
	15	Elevation	Suppression		-	-
	16	Element Type			Diaphragm	
	17	Element Material			SS AISI 316/316L GOLD PLATED	
	18	Body Material	Body Rating		AISI 316 SS	200 bar
	19	Process Connection			1/2" NPT-M	
	20	Wetted O-Rings Material			-	
	21	Fill Fluid			-	
	22	Bolts	Housing		Manifold/Instrument assembly	SS AISI 316/316L
	23	Paint			N/A	
	24	ATEX Certification	Ingress Protection		ATEX Ex II 2G Ex db IIC T5	IP66
	25	Process Connection	Electrical Connection		1/2" NPT-M	2 X M20X1.5
	26	Accuracy			0.07% of Nominal Range	
	27	SIL Certification	PED Certification		SIL2	Required
DIAPHRAGM SEAL	28	Process Connection & Rating			-	
	29	Diaphragm Material	Housing Material		-	-
	30	Fill Fluid	Capillary Material		-	-
	31	Capillary Type	Capillary Length		-	-
	32	Flushing Connection			-	
OPTIONS	33	Integral Meter	Scale		Required	-
	34	Hydrostatic Testing	Cleaning		Required	-
	35	Mounting Brackets	Manifold Model No		Required	MAN2-R6
	36	Lightning Protection	Barrier Manuf./Model		-	-
COMMUNICATION AND SOFTWARE	37	Communication Type	Signal Type		HART 6	4-20mA Loop Powered 24 Vdc
	38	D D Revision	CFF Revision		-	-
	39	Device Tag	Hart Tag		-	-
	40	Internal Diagnostics	Capacitance		-	-
	41	Segment	Device Address		-	-
	42	Device Class	Simulate		-	-
	43	Nominal Current	Operating Voltage		-	-
PURCHASE	44	Manufacturer			TERRANOVA SRL	
	45	Model			SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	46	Purchase Order Number			4718_OS	

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Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PSV-055B	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03803	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PT-001	Hyrogen to vessels inlet header	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240634	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-002	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240635	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-004	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240636	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PT-006	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240638	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-PT-008	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240640	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-PT-009	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240642	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PT-011	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240644	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_2
25-PT-012	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240646	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-035	Vessel V-25001A pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240637	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PT-037	Vessel V-25001B pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240639	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-PT-040	Vessel V-25001C pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240641	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-PT-043	Vessel V-25001D pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240643	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PT-046	Vessel V-25001E pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240645	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_2
25-PT-049	Vessel V-25001F pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240647	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240648	SST76-H-7-K-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PT-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240649	SST76-H-7-K-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PV-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400589	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PV-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400590	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PV-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400591	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PV-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400592	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PV-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400593	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PV-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400594	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PV-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400595	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PV-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400596	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PY-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400589	CV-8407	II 2G	ATEX - SN 2400589	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PY-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400590	CV-8407	II 2G	ATEX - SN 2400590	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PY-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400591	CV-8407	II 2G	ATEX - SN 2400591	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PY-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400592	CV-8407	II 2G	ATEX - SN 2400592	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PY-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400593	CV-8407	II 2G	ATEX - SN 2400593	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PY-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400594	CV-8407	II 2G	ATEX - SN 2400594	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PY-055A	Hydrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400595	CV-8407	II 2G	ATEX - SN 2400595	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PY-055B	Hydrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400596	CV-8407	II 2G	ATEX - SN 2400596	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SDV-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SDV-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SDY-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SDY-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-SV-031	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-SV-032	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-SV-033	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-SV-034	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-SV-035	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-SV-036	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-SV-037	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
1	00	43-LT-001	Differential Pressure Transmitter		Terranova Srl	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1	SE240632	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
2	00	43-LT-003	Differential Pressure Transmitter		Terranova Srl	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1	SE240633	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
3	00	25-PT-001	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240634	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
4	00	25-PT-002	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240635	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
5	00	25-PT-004	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240636	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
6	00	25-PT-035	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240637	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
7	00	25-PT-006	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240638	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
8	00	25-PT-037	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240639	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
9	00	25-PT-008	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240640	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
10	00	25-PT-040	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240641	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
11	00	25-PT-009	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240642	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
12	00	25-PT-043	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240643	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
13	00	25-PT-011	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240644	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
14	00	25-PT-046	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240645	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
15	00	25-PT-012	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240646	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
16	00	25-PT-049	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240647	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
17	00	25-PT-055A	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-9-2-1-4 + MAN2-R6	SE240648	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
18	00	25-PT-055B	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-9-2-1-4 + MAN2-R6	SE240649	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
19	00	43-PT-001	Pressure Transmitter		Terranova Srl	SST76-H-7-G-2-9-2-1-4 + MAN2-R6	SE240650	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
20	00	50-PT-014	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240651	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
21	00	63-PT-003	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240652	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
22	00	63-PT-004	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240653	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
23	00	64-PT-031A	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240654	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
24	00	64-PT-031B	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240655	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
25	00	64-PT-002	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240656	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
26	00	80-PT-002	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240657	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
27	00	50-TT-001 / 50-TE-001 / 50-TW-001	Temperature Transmitter		Terranova Srl	SST72-TH-1-C-9-1-B-4-3 + TWE	SE240658	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
28	00	50-TT-002 / 50-TE-002 / 50-TW-002	Temperature Transmitter		Terranova Srl	SST72-TH-1-C-9-1-B-4-3 + TWE	SE240659	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
29	00	50-PT-001	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03	SE240660	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
30	00	50-PT-002	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03	SE240661	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
31	00	55-LIT-001	Radar Level Transmitter		Tokio Heiki Inc.	KRG-10-AD03PV-AA (KRG-E-P3-R01-N-L-D08-F79-N00-N-D-V-81-A-R2-Z6)	105429 (VE241368)	ATEX Ex II 1/2 G Ex ia/db IIC T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	FM13ATEX0069X			4718_OS	Terranova Srl	N/A	N/A	No	Yes

Technická inšpekcia, a.s.
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Slovenská republika

[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] Supplementary EU-Type Examination Certificate Number:

TI17ATEX 304 X / 1

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This supplementary certificate extends EU – Type Examination Certificate No. TI17ATEX 304 X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

Bratislava, March 08th, 2021

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General Director

This certificate may only be reproduced in its entirety and change, schedule included.

CSTA3-128

NB 1354

[13] **Schedule**

[14] **Supplementary EU-Type Examination Certificate Number: TI17ATEX 304 X / 1**

[15] Description of the variation to the product:

The subject of this supplementary certificate is extension of product SPRIANO® Electronic transmitter series SST7X, Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator), which has protection mode "Ex-db" certified by certificate TI17ATEX304X, to the protection mode "Ex-ia" certified by certificate TI17ATEX305X.
Electronic inside the Series SST7X has been used the same as the SST5X described into TI17ATEX305X certificate.
Housing materials to be used Anticorodal Aluminum or Stainless Steel according previous certificates.
New Variation to the product are:

		With Aluminum housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1/2 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C
		With SS AISI 316 housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C

Basic description of product:

The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA + HART®.
According to the process connection, the series SST7X is constituted by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

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CSTA3-128

TERRANOVA® SPRIANO MEC-RELA

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.
Model SST71: The transmitter is isolated from the process via a tube containing reed switches.
Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.
Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.
Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.
Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Product with variation of Exdb protection:

The instruments are suitable for gas group IIC or IIB depending by the Ambient Temperature and they have the type of protection "Ex db".
Temperature: -40 ° C ≤Tamb≤ + 60 ° C (or -40 ° C ≤Tamb≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the instrument is installed with a suitable finned arm that can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in Anticorodal Aluminum or Stainless Steel AISI 304 / 316 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA + HART®
Maximum power transferred	0,75 W
ATEX category	II 1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

The marking of the product shall include the following:

⟨Ex⟩ II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

Product with variation of Exia protection:

The instruments are suitable for gas group IIC and have the type of protection "Ex i".
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made of stainless steel or aluminum having a content Mg of less than 6% (coating thickness <0.15mm) while the door can be static plastic, 5 mm thick (glue Araldite 2021) or sodalime tempered glass, 5 mm thick (glue Araldite 2011).

TERRANOVA MEC-RELLA

TEKNIŠKA INSPEKCIJA SLOVENSKÁ REPUBLIKA NB 1354 -5-

Electrical characteristics:

Parameter	Tamb<60°C	Tamb<80°C
Maximum voltage input **Ui**	30 V	25.2 V
Maximum current input **Ii**	100 mA	100 mA
Power maximum input **Pi**	0.75 W	0.62 W
Maximum capacity Internal	10 nF	10 nF
Maximum Internal Inductance	0.2 mH	0.2 mH
Output signal	4 ÷ 20 mA + HART®	
Degree of protection	IP 66 for Aluminum housing IP67 for SS AISI 316 housing	

The marking of the product shall include the following:

II 1/2G Ex ia IIC T6, T5, T4 Ga/Gb **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For Aluminum housing**	**1G Ex ia IIC T6, T5, T4 Ga** **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For SS AISI 316 housing**

[16] Report Number:
Inspection report No: 54/5/2021
Final Test Report No: 54/5/2021

[17] Specific Conditions of Use:

Product with variation of Exdb protection:

Ambient temperature:
Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C
In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT or M20x1.5) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

Product with variation of Exia protection:

Ambient temperature:

-40°C ÷ +40°C	For Class T6
-40°C ÷ +55°C	For Class T5
-40°C ÷ +80°C	For Class T4

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable

spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	4pgs	REV No.21.02	12/02/2021	List of drawings and Documents SPRIANO ® Electronic Switches SST7X By TERRANOVA ®
TI17ATEX305X	3 pgs	-	13/03/2017	EU –Type Examination Certificate (Exia)

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Tel.: +421 2 49208 100

TECHNICKÁ INŠPEKCIA • TI NB 1354 - 5 - • SLOVENSKÁ REPUBLIKA

Bratislava, March 08th, 2021

Ing. Dušan Perniš
General Director

TECHNICKÁ INŠPEKCIA, a.s.

SLOVENSKÁ REPUBLIKA

CEOC INTERNATIONAL

[1] EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] EU-Type Examination Certificate Number:

TI17ATEX 304 X

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of product intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report No. 304/5/2017.

[9] Compliance with the Essential Health and safety Requirements has been assured by compliance with: **EN 60079-0:2012+A11:2013, EN 60079-1:2014**
except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicate that the product is subject to the Specific conditions of Use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of this Directive apply to the manufacturing process and supply of this product.

[12] The marking of the product shall include the following:

Ex II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

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TECHNICKÁ INŠPEKCIA • TI • NB 1354 - 5 - • SLOVENSKÁ REPUBLIKA

Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

NB 1354

[13] **Schedule**

[14] **EU-Type Examination Certificate Number: TI17ATEX 304 X**

[15] Description of product:
The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA.
The instruments are suitable for gas group IIC and have the type of protection "Ex db".
Temperature: -40 ° C ≤Tamb≤ + 60 ° C (or -40 ° C ≤Tamb≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the appliance is installed with a suitable spacer can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a bodice of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in anticorodal aluminum or stainless steel AISI 304 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

According to the process connection, the series SST7 is formed by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.

Model SST71: The transmitter is isolated from the process via a tube containing reed switches.

Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.

Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.

Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.

Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA
Maximum power transferred	0,75 W
ATEX category	1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

[16] Report Number:
Inspection report No: 304/5/2017
Final Test Report No: 304/5/2017

[17] Specific Conditions of Use:

Ambient temperature:
Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	3pgs	REV No.17.01	31/01/2017	List of drawings and Documents SPRIANO® Electronic Switches SST7X

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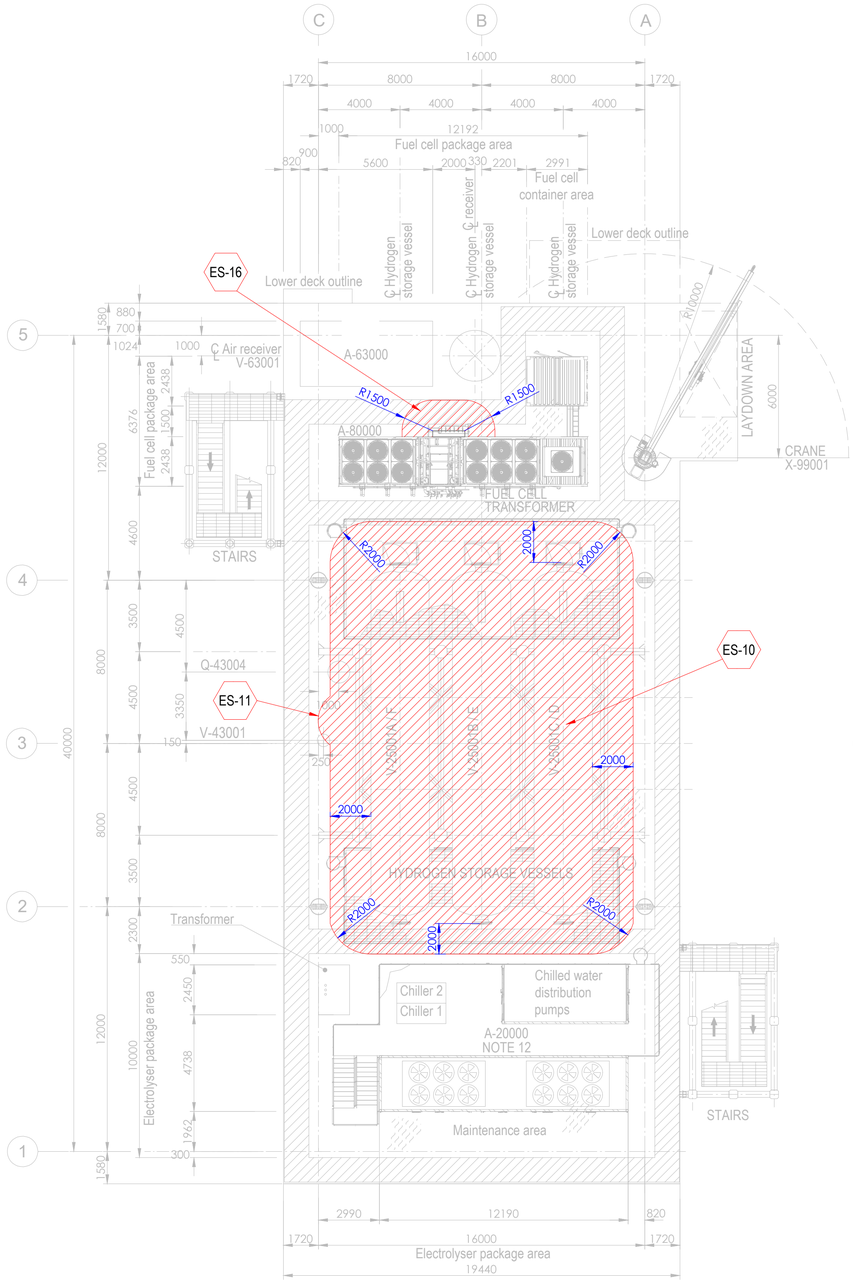
Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

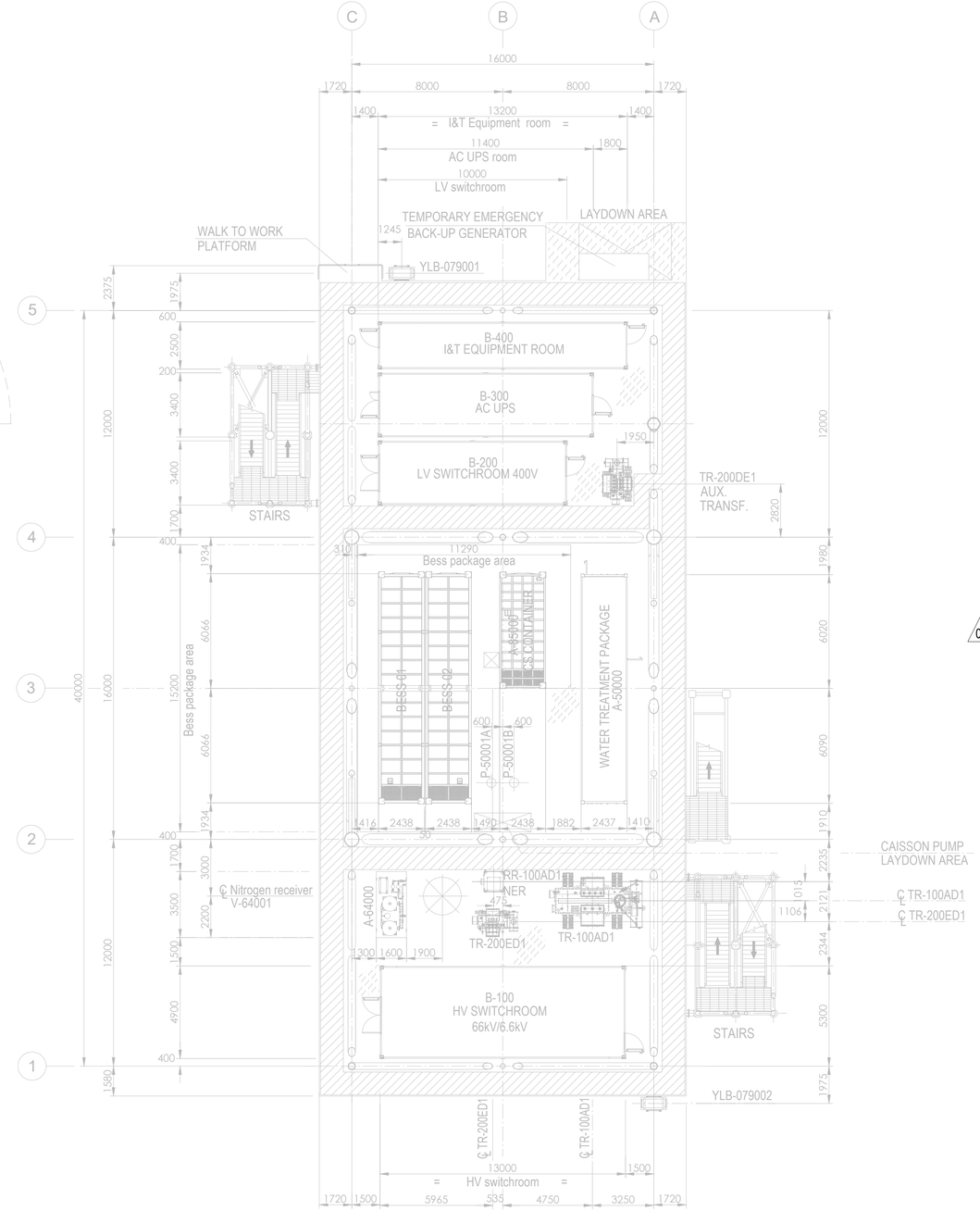
CSTA3-128

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



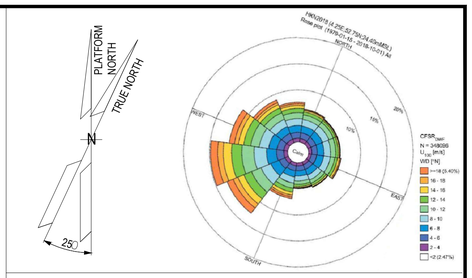
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

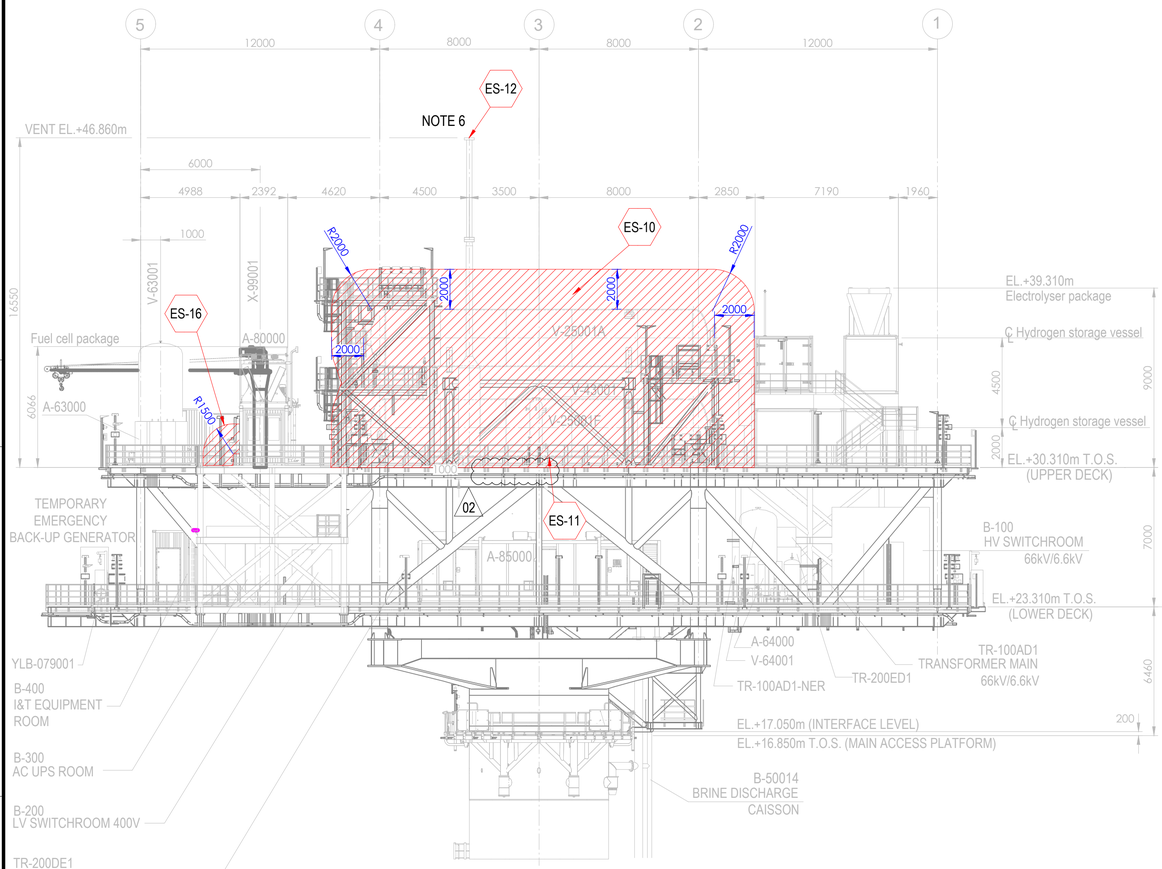
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

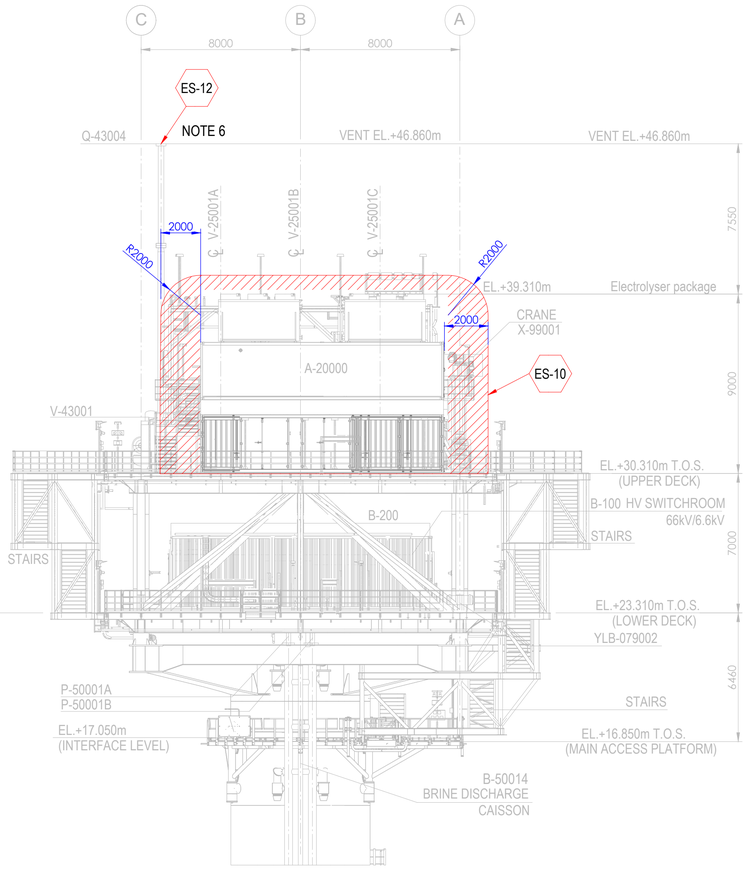
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

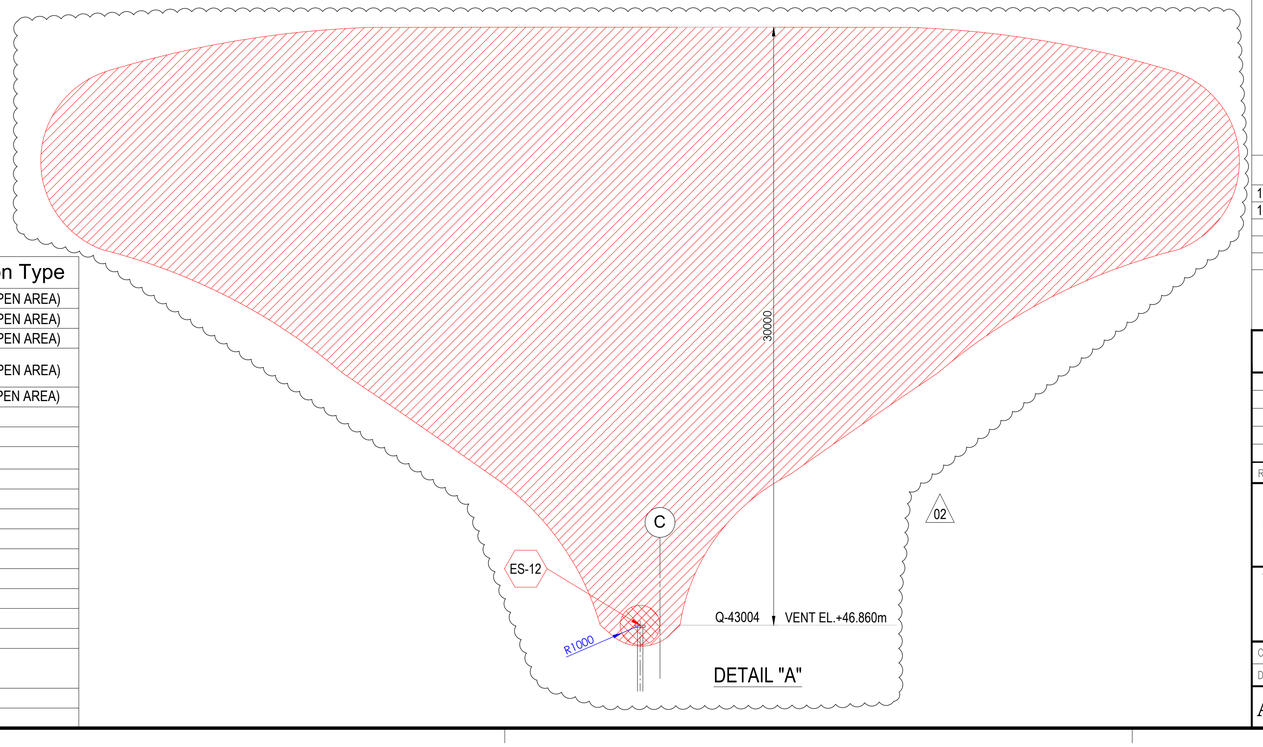


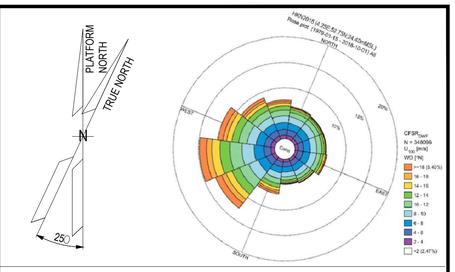
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PT-046	: Pressure Transmitter - Vessel V-25001E Pressure Control	Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001494	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	SE240645				
Manufacturer	Terranova Srl			**Model**	SST76 + MAN2-R6				
Cert No.	TI17ATEX304X - TI17ATEX304X/1			**Equipment Ambient Temp.**	-40°C to +60°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	PL	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PT-046	: Pressure Transmitter - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001494		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PT-046	: Pressure Transmitter - Vessel V-25001E Pressure Control		Dwg	123A90-DDL-PR-PID-80016	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001494	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

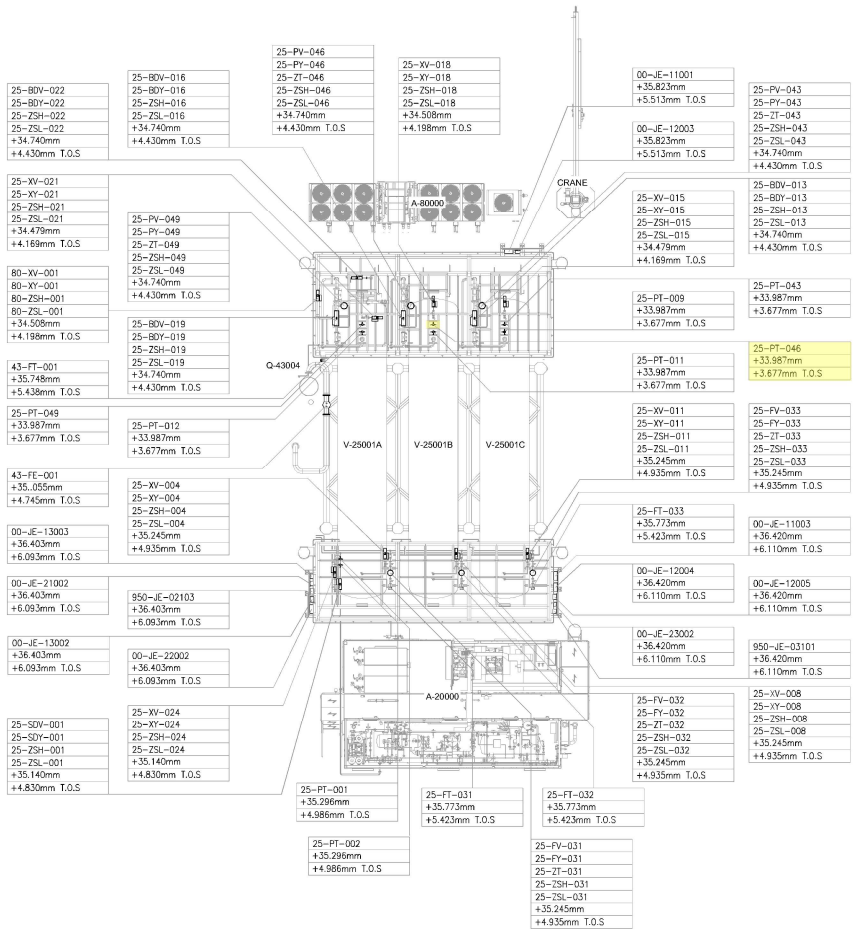
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-13	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-13T12:25:47.695Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-18T15:00:45.975Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

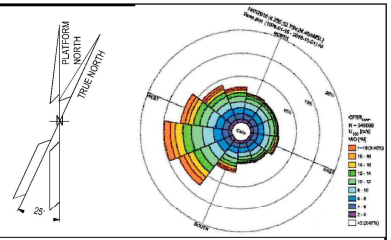
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

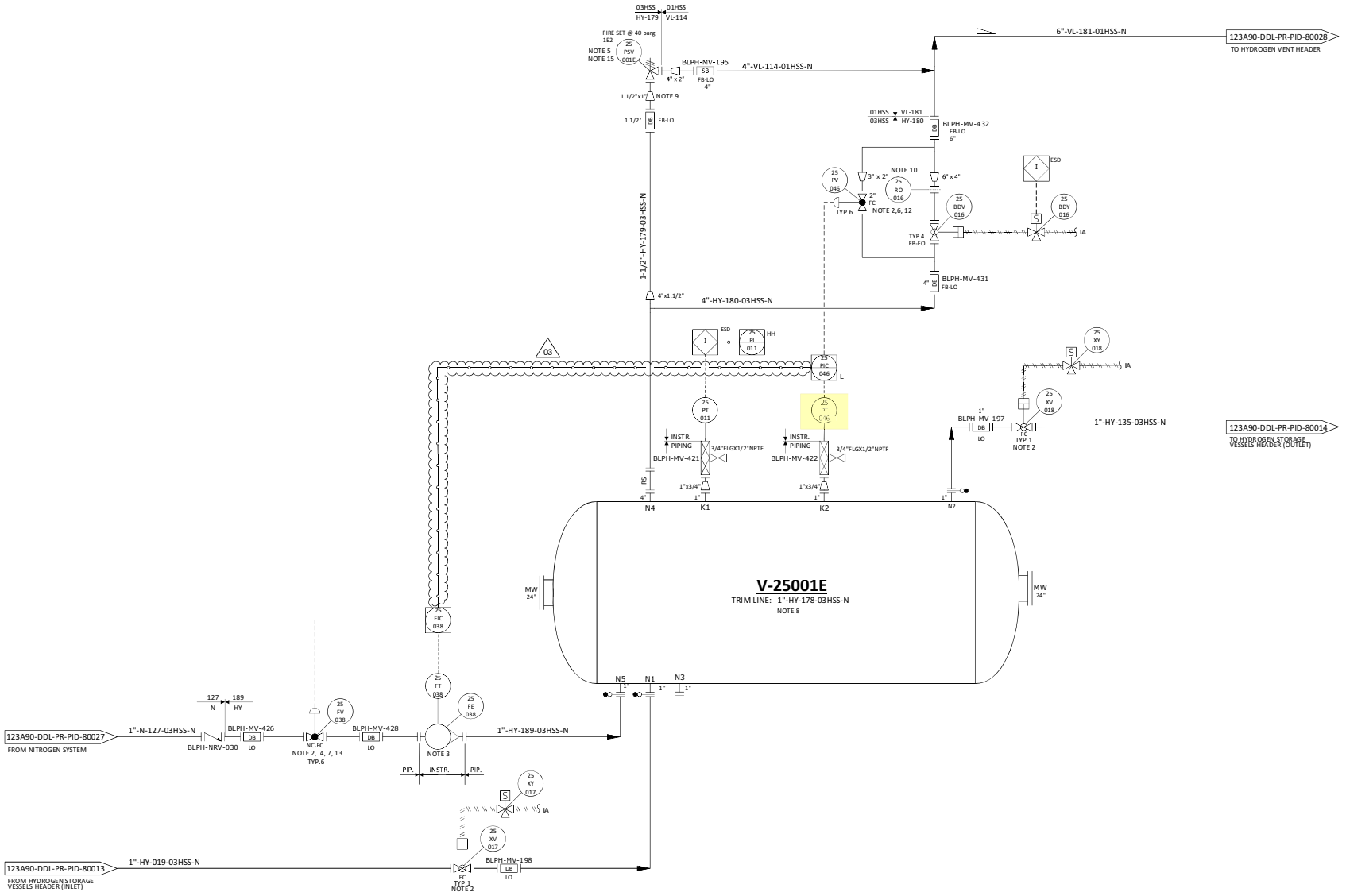
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

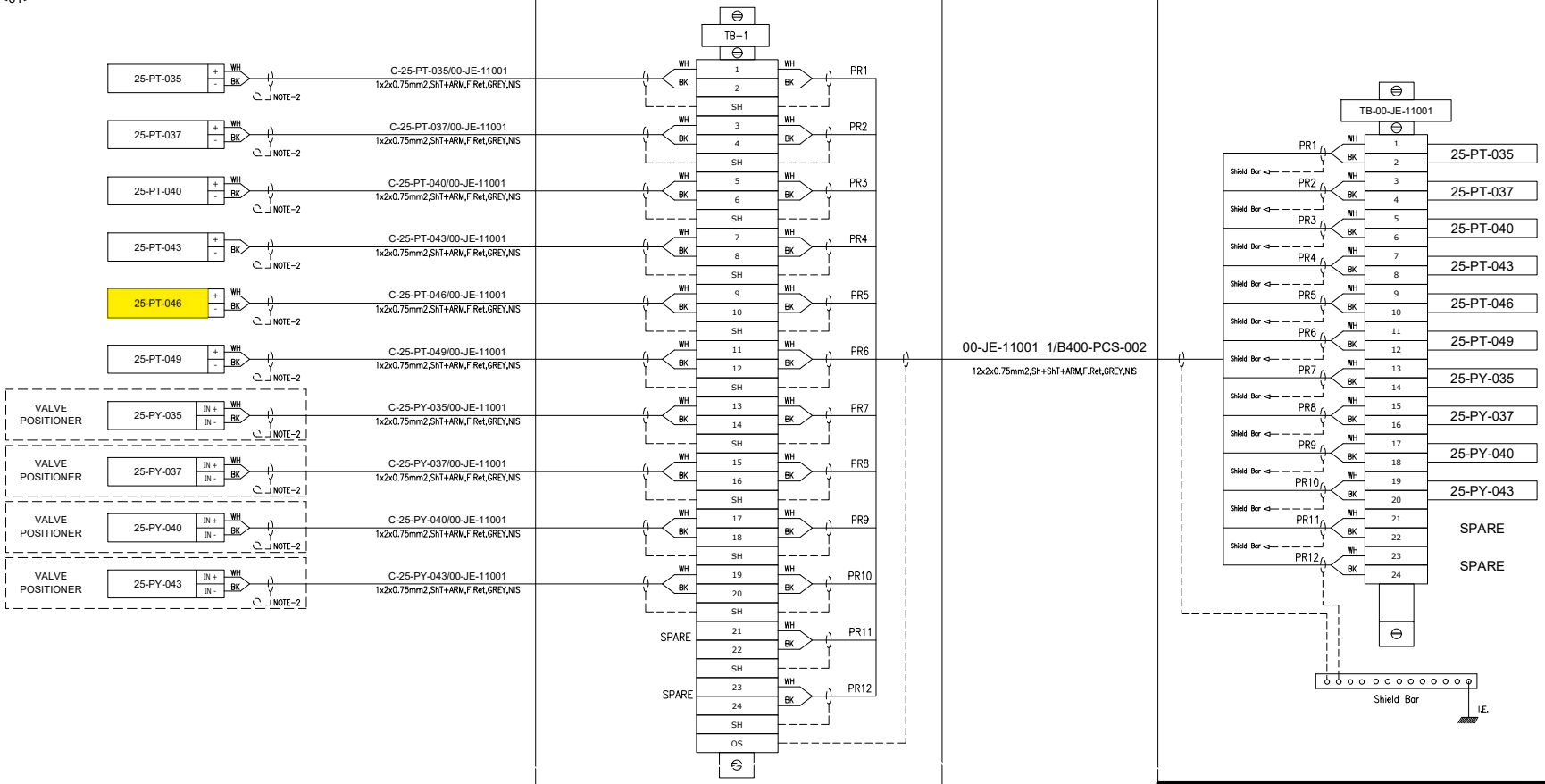
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001 / REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11001	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

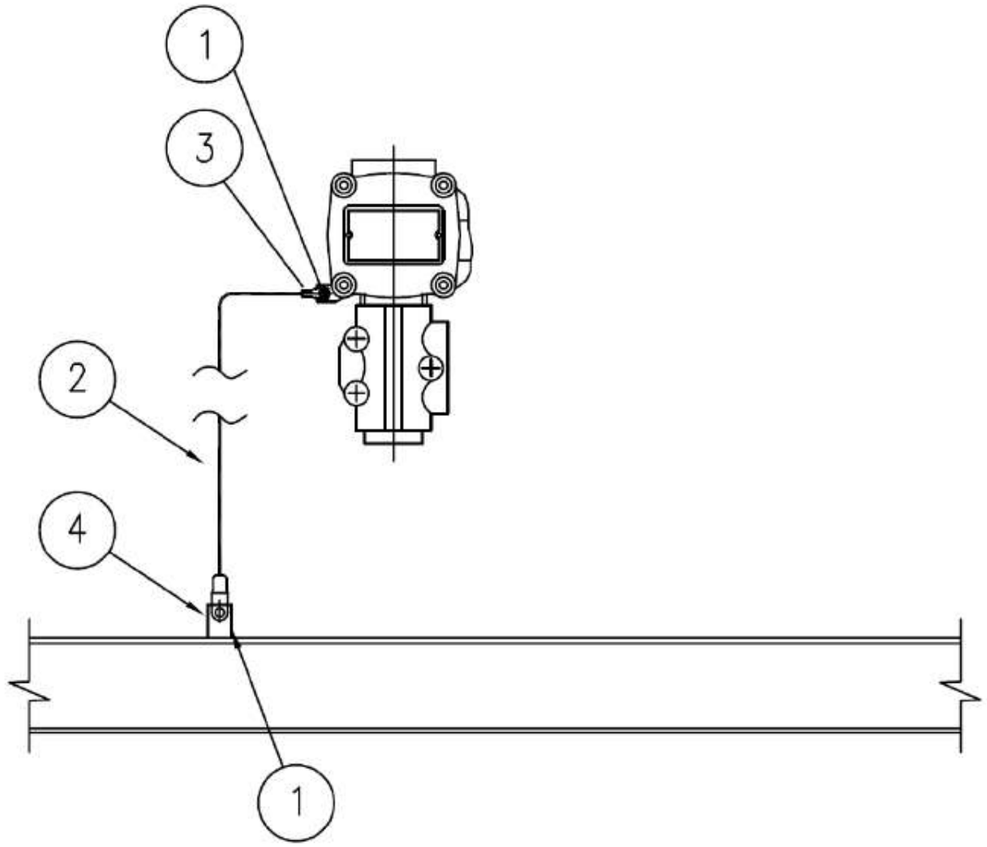
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11001–SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	004	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DD-20090
REV.: 2_I | DATE: 07/11/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

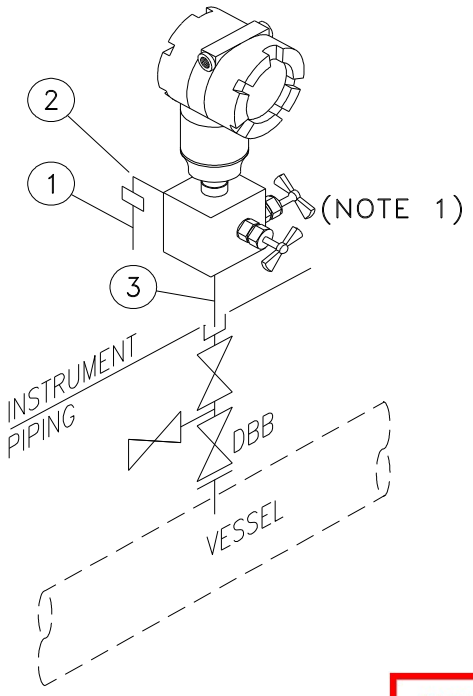
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

PRESSURE TRANSMITTERS - Installation for Gas Service



	INSTRUMENT TAG
1	25-PT-004
2	25-PT-006
3	25-PT-008
4	25-PT-009
5	25-PT-011
6	25-PT-012
7	25-PT-035
8	25-PT-037
9	25-PT-040
10	25-PT-043
11	25-PT-046
12	25-PT-049
13	25-PT-001
14	25-PT-002
15	25-PT-055A
16	25-PT-055B
17	43-PT-001
18	50-PT-014
19	63-PT-003
20	63-PT-004
21	~~64-PT-031A~~
22	64-PT-031B
23	64-PT-002
24	80-PT-002
25	
26	
27	
28	
29	
30	

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40077**

REV.:	DATE:	SIGNATURE:
2_B	17/01/25	G.Randi

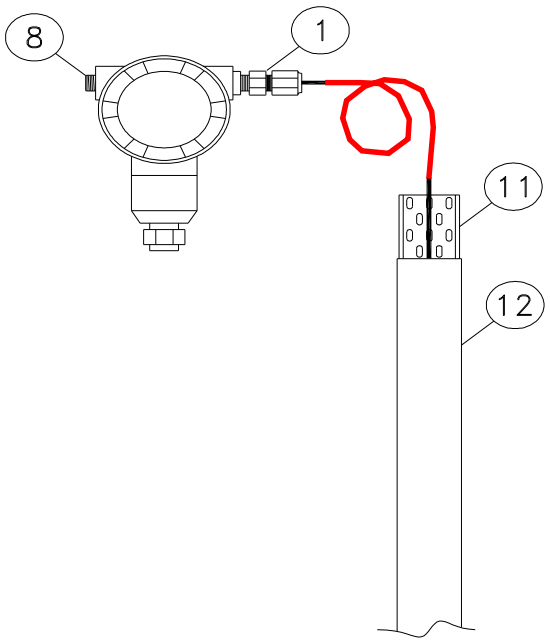
ROSETTI MARINO SpA

NOTES:
(1) MANIFOLD IS SUPPLIED WITH INSTRUMENT.
(2) VENDOR SHALL GUARANTEE THE MATERIAL COUPLING BETWEEN TUBING AND FITTINGS.

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
3		SS316 NIPPLE	1/2" NPT L=100mm	N. 1
2		ELBOW SS316	1/4" NPT-M x 1/2" O.D	N. 1
1		SS 316L TUBING (NOTE 2)	1/2" x 0,049"Thk	m 0.5

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ELECTRICAL HOOK-UP FOR PRESSURE TRANSMITTERS



	INSTRUMENT TAG
1	25-PT-001
2	25-PT-035
3	25-PT-037
4	25-PT-040
5	25-PT-043
6	25-PT-046
7	25-PT-049
8	25-PT-055A
9	25-PT-055B
10	43-PT-001
11	50-PT-014
12	63-PT-003
13	64-PT-031A
14	64-PT-031B
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

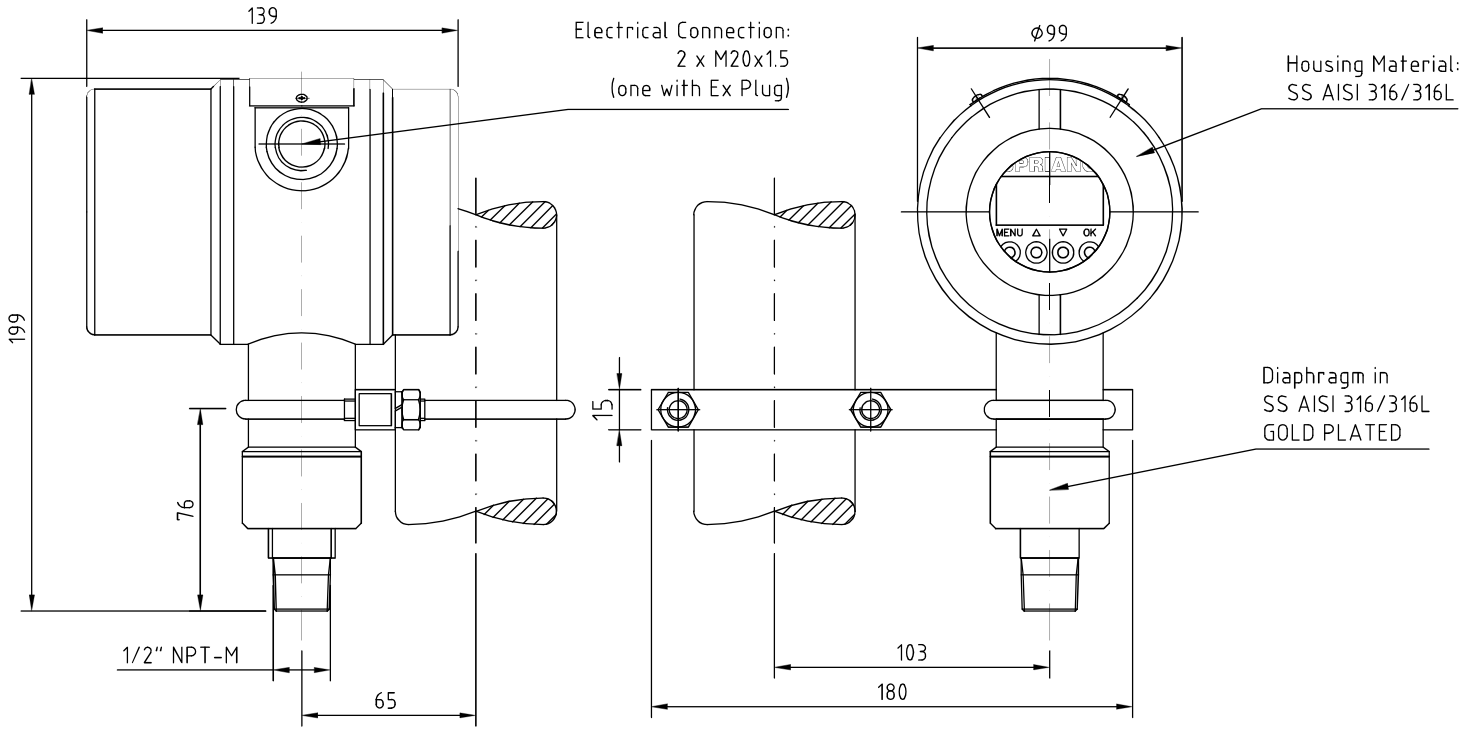
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	1

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SST76 PRESSURE TRANSMITTERS

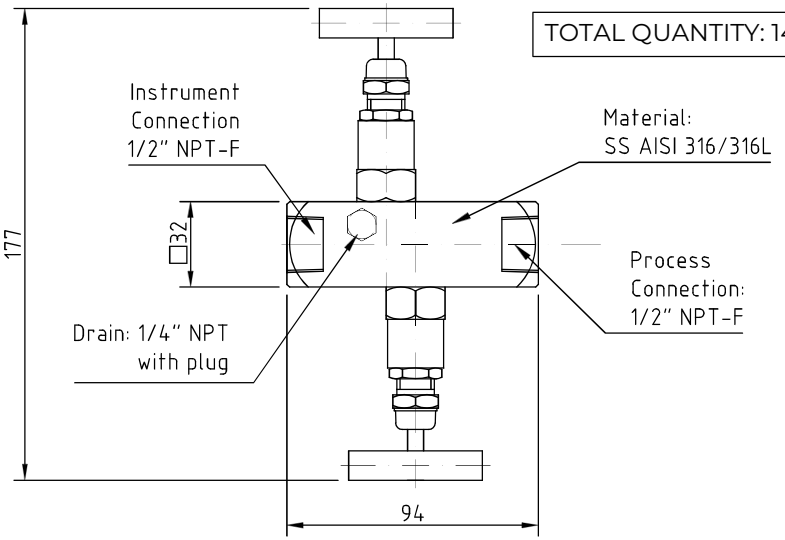


TAG LIST

#	TAG	RANGE	CALIBRATION
1	25-PT-001	0 ÷ 100 barg	0 ÷ 40 barg
2	25-PT-002	0 ÷ 100 barg	0 ÷ 40 barg
3	25-PT-004	0 ÷ 100 barg	0 ÷ 40 barg
4	25-PT-035	0 ÷ 100 barg	0 ÷ 40 barg
5	25-PT-006	0 ÷ 100 barg	0 ÷ 40 barg
6	25-PT-037	0 ÷ 100 barg	0 ÷ 40 barg
7	25-PT-008	0 ÷ 100 barg	0 ÷ 40 barg
8	25-PT-040	0 ÷ 100 barg	0 ÷ 40 barg
9	25-PT-009	0 ÷ 100 barg	0 ÷ 40 barg
10	25-PT-043	0 ÷ 100 barg	0 ÷ 40 barg
11	25-PT-011	0 ÷ 100 barg	0 ÷ 40 barg
12	25-PT-046	0 ÷ 100 barg	0 ÷ 40 barg
13	25-PT-012	0 ÷ 100 barg	0 ÷ 40 barg
14	25-PT-049	0 ÷ 100 barg	0 ÷ 40 barg

TOTAL QUANTITY: 14

MAN2-R6 TWO WAYS AND TWO VALVES MANIFOLD



NOTES

SST76 PRESSURE TRANSMITTERS
SST76-H-7-L-2-9-2-1-4 + MAN2-R6

H - OUTPUT: 4-20 mA + HART
7 - PROCESS CONNECTION: 1/2" NPT M;
L - NOMINAL RANGE: 0 ÷ 100 barg
2 - CALIBRATION: 0 ÷ 40 barg
9 - DIAPHRAGM MATERIAL: SS AISI 316/316L GOLD PLATED
2 - OPTIONS: HOUSING MATERIAL STAINLESS STEEL WITH ELECTRICAL CONNECTIONS 2 x 1/2" NPT-F
1 - OPTIONS: MOUNTING BRACKET FOR 2" PIPE MOUNTING
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1G Ex ia IIC T6/T5/T4 Ga

to be coupled with:
1. MAN2-R6 TWO VALVES AND TWO WAYS MANIFOLD, MATERIAL SS AISI 316/316L, CONNECTION TO INSTRUMENT 1/2" NPT-F, PROCESS CONNECTION 1/2" NPT-F.

NOTES:
1. OVERALL ACCURACY OF PT (COMPREHENSIVE OF HYSTERESIS, NON-LINEARITY, REPEATABILITY) IS WITHIN +/- 0,07% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS NAMEPLATE;
3. FILLING OF ELEMENT IS FORESEEN WITH DOW CORNING SILICONIC OIL;
4. ELECTRICAL CONNECTION ARE: 2 X 1/2" NPT-F (ONE PLUGGED);
5. INTEGRAL LCD /CONFIGURABLE ENGINEERING UNITS;
6. INGRESS PROTECTION EN 60529: IP66;
7. HOUSING MATERIAL STAINLESS STEEL;
8. ALL INSTRUMENT ARE SIL2/SIL3 CERTIFIED;
9. HART 6.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDROTEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abolini	G. Abolini	L. Valletti
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abolini	G. Abolini	L. Valletti
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abolini	G. Abolini	L. Valletti
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sassi	G. Abolini	G. Abolini	L. Valletti

CROSSWIND ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:2

TERRANOVA

TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB: 4718_OS | SHEET No. 4 OF 10 | REV. 03

GENERAL	1	Tag Number		25-PT-046	
	2	Service		HYDROGEN STORAGE VESSEL (V-25001E)	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80019	V-25001E
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		HYDROGEN	
	9	Pressure Des.	Oper. [barg]	40	30
	10	Temperature Des.	Oper. [°C]	-10 / + 80 °C	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
TRANSMITTER	13	Instrument Range Min.	Max. [barg]	0	100
	14	Calibration Range Min.	Max. [barg]	0	40
	15	Elevation	Suppression	-	-
	16	Element Type		Diaphragm	
	17	Element Material		SS AISI 316/316L GOLD PLATED	
	18	Body Material	Body Rating	AISI 316 SS	200 bar
	19	Process Connection		1/2" NPT-M	
	20	Wetted O-Rings Material		-	
	21	Fill Fluid		-	
	22	Bolts	Housing	Manifold/Instrument assembly	SS AISI 316/316L
	23	Paint		N/A	
	24	ATEX Certification	Ingress Protection	ATEX Ex II 2G Ex db IIC T5	IP66
	25	Process Connection	Electrical Connection	1/2" NPT-M	2 X M20X1.5
	26	Accuracy		0.07% of Nominal Range	
	27	SIL Certification	PED Certification	-	Required
DIAPHRAGM SEAL	28	Process Connection & Rating		-	
	29	Diaphragm Material	Housing Material	-	-
	30	Fill Fluid	Capillary Material	-	-
	31	Capillary Type	Capillary Length	-	-
	32	Flushing Connection		-	
OPTIONS	33	Integral Meter	Scale	Required	-
	34	Hydrostatic Testing	Cleaning	Required	-
	35	Mounting Brackets	Manifold Model No	Required	MAN2-R6
	36	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	37	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	38	D D Revision	CFF Revision	-	-
	39	Device Tag	Hart Tag	-	-
	40	Internal Diagnostics	Capacitance	-	-
	41	Segment	Device Address	-	-
	42	Device Class	Simulate	-	-
	43	Nominal Current	Operating Voltage	-	-
PURCHASE	44	Manufacturer		TERRANOVA SRL	
	45	Model		SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	46	Purchase Order Number		4718_OS	

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Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PSV-055B	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03803	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PT-001	Hyrogen to vessels inlet header	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240634	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-002	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240635	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-004	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240636	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PT-006	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240638	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-PT-008	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240640	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-PT-009	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240642	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PT-011	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240644	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_2
25-PT-012	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240646	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-035	Vessel V-25001A pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240637	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PT-037	Vessel V-25001B pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240639	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-PT-040	Vessel V-25001C pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240641	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-PT-043	Vessel V-25001D pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240643	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PT-046	Vessel V-25001E pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240645	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_2
25-PT-049	Vessel V-25001F pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240647	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240648	SST76-H-7-K-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PT-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240649	SST76-H-7-K-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PV-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400589	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PV-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400590	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PV-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400591	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PV-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400592	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PV-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400593	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PV-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400594	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PV-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400595	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PV-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400596	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PY-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400589	CV-8407	II 2G	ATEX - SN 2400589	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PY-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400590	CV-8407	II 2G	ATEX - SN 2400590	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PY-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400591	CV-8407	II 2G	ATEX - SN 2400591	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PY-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400592	CV-8407	II 2G	ATEX - SN 2400592	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PY-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400593	CV-8407	II 2G	ATEX - SN 2400593	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PY-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400594	CV-8407	II 2G	ATEX - SN 2400594	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PY-055A	Hydrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400595	CV-8407	II 2G	ATEX - SN 2400595	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PY-055B	Hydrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400596	CV-8407	II 2G	ATEX - SN 2400596	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SDV-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SDV-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SDY-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SDY-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-SV-031	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-SV-032	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-SV-033	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-SV-034	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-SV-035	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-SV-036	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-SV-037	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
1	00	43-LT-001	Differential Pressure Transmitter		Terranova Srl	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1	SE240632	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
2	00	43-LT-003	Differential Pressure Transmitter		Terranova Srl	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1	SE240633	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
3	00	25-PT-001	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240634	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
4	00	25-PT-002	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240635	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
5	00	25-PT-004	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240636	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
6	00	25-PT-035	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240637	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
7	00	25-PT-006	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240638	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
8	00	25-PT-037	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240639	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
9	00	25-PT-008	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240640	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
10	00	25-PT-040	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240641	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
11	00	25-PT-009	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240642	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
12	00	25-PT-043	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240643	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
13	00	25-PT-011	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240644	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
14	00	25-PT-04b	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240645	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
15	00	25-PT-012	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240646	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
16	00	25-PT-049	Pressure Transmitter		Terranova Srl	SST76-H-7-L-2-9-2-1-4 + MAN2-R6	SE240647	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
17	00	25-PT-055A	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-9-2-1-4 + MAN2-R6	SE240648	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
18	00	25-PT-055B	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-9-2-1-4 + MAN2-R6	SE240649	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
19	00	43-PT-001	Pressure Transmitter		Terranova Srl	SST76-H-7-G-2-9-2-1-4 + MAN2-R6	SE240650	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
20	00	50-PT-014	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240651	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
21	00	63-PT-003	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240652	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
22	00	63-PT-004	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240653	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
23	00	64-PT-031A	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240654	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
24	00	64-PT-031B	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240655	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
25	00	64-PT-002	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240656	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
26	00	80-PT-002	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-0-2-1-4 + MAN2-R6	SE240657	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
27	00	50-TT-001 / 50-TE-001 / 50-TW-001	Temperature Transmitter		Terranova Srl	SST72-TH-1-C-9-1-B-4-3 + TWE	SE240658	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
28	00	50-TT-002 / 50-TE-002 / 50-TW-002	Temperature Transmitter		Terranova Srl	SST72-TH-1-C-9-1-B-4-3 + TWE	SE240659	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
29	00	50-PT-001	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03	SE240660	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
30	00	50-PT-002	Pressure Transmitter		Terranova Srl	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03	SE240661	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	TI17ATEX304X			4718_OS	Terranova Srl	N/A	N/A	No	Yes
31	00	55-LIT-001	Radar Level Transmitter		Tokio Heiki Inc.	KRG-10-AD03PV-AA (KRG-E-P3-R01-N-L-D08-F79-N00-N-D-V-81-A-R2-Z6)	105429 (VE241368)	ATEX Ex II 1/2 G Ex ia/db IIC T4 Ga/Gb	1724000979-IN-DA-00003 Rev. 03	FM13ATEX0069X			4718_OS	Terranova Srl	N/A	N/A	No	Yes

Technická inšpekcia, a.s.
Trnavská cesta 56, 821 01 Bratislava
Slovenská republika

[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] Supplementary EU-Type Examination Certificate Number:

TI17ATEX 304 X / 1

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This supplementary certificate extends EU – Type Examination Certificate No. TI17ATEX 304 X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

Bratislava, March 08th, 2021

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Ing. Dušan Perniš
General Director

This certificate may only be reproduced in its entirety and change, schedule included.

CSTA3-128

NB 1354

[13] **Schedule**

[14] **Supplementary EU-Type Examination Certificate Number: TI17ATEX 304 X / 1**

[15] Description of the variation to the product:

The subject of this supplementary certificate is extension of product SPRIANO® Electronic transmitter series SST7X, Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator), which has protection mode "Ex-db" certified by certificate TI17ATEX304X, to the protection mode "Ex-ia" certified by certificate TI17ATEX305X.
Electronic inside the Series SST7X has been used the same as the SST5X described into TI17ATEX305X certificate.
Housing materials to be used Anticorodal Aluminum or Stainless Steel according previous certificates.
New Variation to the product are:

		With Aluminum housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1/2 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C
		With SS AISI 316 housing	
		Without safety barrier	
Ex	II 1/2 G	Ex db IIC T6 Ga/Gb	-40°C<Tamb<+60°C
		Ex db IIB T5 Ga/Gb	-40°C<Tamb<+80°C
		or	
		With safety barrier	
Ex	II 1 G	Ex ia IIC T6, T5, T4 Ga	-40°C<Tamb<+40°C / +55°C / +80°C

Basic description of product:

The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA + HART®.
According to the process connection, the series SST7X is constituted by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

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CSTA3-128

TERRANOVA® SPRIANO MEC-RELA

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.
Model SST71: The transmitter is isolated from the process via a tube containing reed switches.
Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.
Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.
Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.
Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Product with variation of Exdb protection:

The instruments are suitable for gas group IIC or IIB depending by the Ambient Temperature and they have the type of protection "Ex db".
Temperature: -40 ° C ≤Tamb≤ + 60 ° C (or -40 ° C ≤Tamb≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the instrument is installed with a suitable finned arm that can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in Anticorodal Aluminum or Stainless Steel AISI 304 / 316 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA + HART®
Maximum power transferred	0,75 W
ATEX category	II 1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

The marking of the product shall include the following:

⟨Ex⟩ II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

Product with variation of Exia protection:

The instruments are suitable for gas group IIC and have the type of protection "Ex i".
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a body of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made of stainless steel or aluminum having a content Mg of less than 6% (coating thickness <0.15mm) while the door can be static plastic, 5 mm thick (glue Araldite 2021) or sodalime tempered glass, 5 mm thick (glue Araldite 2011).

TERRANOVA MEC-RELLA

TEKNIŠKA INSPEKCIJA SLOVENSKÁ REPUBLIKA NB 1354 -5-

Electrical characteristics:

Parameter	Tamb<60°C	Tamb<80°C
Maximum voltage input **Ui**	30 V	25.2 V
Maximum current input **Ii**	100 mA	100 mA
Power maximum input **Pi**	0.75 W	0.62 W
Maximum capacity Internal	10 nF	10 nF
Maximum Internal Inductance	0.2 mH	0.2 mH
Output signal	4 ÷ 20 mA + HART®	
Degree of protection	IP 66 for Aluminum housing IP67 for SS AISI 316 housing	

The marking of the product shall include the following:

II 1/2G Ex ia IIC T6, T5, T4 Ga/Gb **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For Aluminum housing**	**1G Ex ia IIC T6, T5, T4 Ga** **-40°C ≤ Tamb ≤ 40°C (T6)** **-40°C ≤ Tamb ≤ 55°C (T5)** **-40°C ≤ Tamb ≤ 80°C (T4)** **For SS AISI 316 housing**

[16] Report Number:
Inspection report No: 54/5/2021
Final Test Report No: 54/5/2021

[17] Specific Conditions of Use:

Product with variation of Exdb protection:

Ambient temperature:
Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C
In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT or M20x1.5) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

Product with variation of Exia protection:

Ambient temperature:

-40°C ÷ +40°C	For Class T6
-40°C ÷ +55°C	For Class T5
-40°C ÷ +80°C	For Class T4

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable

spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	4pgs	REV No.21.02	12/02/2021	List of drawings and Documents SPRIANO ® Electronic Switches SST7X By TERRANOVA ®
TI17ATEX305X	3 pgs	-	13/03/2017	EU –Type Examination Certificate (Exia)

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Tel.: +421 2 49208 100

TECHNICKÁ INŠPEKCIA • TI NB 1354 - 5 - • SLOVENSKÁ REPUBLIKA

Bratislava, March 08th, 2021

Ing. Dušan Perniš
General Director

TECHNICKÁ INŠPEKCIA, a.s.

SLOVENSKÁ REPUBLIKA

CEOC INTERNATIONAL

[1] EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] EU-Type Examination Certificate Number:

TI17ATEX 304 X

[4] Product:

SPRIANO® Electronic transmitter series SST7X
Type: SST70, SST71, SST72, SST75, SST76, SST77B, SST77BL, SST79B and SST70-REM (Indicator)

[5] Manufacturer: **TERRANOVA S.r.l.**

[6] Address: **Via Gramsci, 1, 26827 – Terranova dei Passerini (LO), Italy**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of product intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report No. 304/5/2017.

[9] Compliance with the Essential Health and safety Requirements has been assured by compliance with: **EN 60079-0:2012+A11:2013, EN 60079-1:2014**
except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicate that the product is subject to the Specific conditions of Use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of this Directive apply to the manufacturing process and supply of this product.

[12] The marking of the product shall include the following:

Ex II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

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TECHNICKÁ INŠPEKCIA • TI • NB 1354 - 5 - • SLOVENSKÁ REPUBLIKA

Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

NB 1354

[13] **Schedule**

[14] **EU-Type Examination Certificate Number: TI17ATEX 304 X**

[15] Description of product:
The Transmitters series electronic SST7X measure pressure, level or temperature of liquids, gases and vapors and transmit a current signal 4-20mA.
The instruments are suitable for gas group IIC and have the type of protection "Ex db".
Temperature: -40 ° C ≤Tamb≤ + 60 ° C (or -40 ° C ≤Tamb≤ + 80 ° C)
In the case where the process temperatures are higher than the maximum ambient temperature (or below the minimum ambient temperature), the appliance is installed with a suitable spacer can dissipate the temperature in excess and ensure the installation inside the ambient temperature range specified by the manufacturer.
The instruments are composed of two parts:
• The housing, the same for all models, which contains the electronic board and the electrical connections.
• The sensing element contained in a bodice of stainless steel that allows the process connection.
The housing is constituted by the body and by two closing covers (one of which is equipped with transparent windows). The metal parts can be made in anticorodal aluminum or stainless steel AISI 304 (Thickness of coating <0.15mm) while the door is tempered-glass glued to the lid with a silicone seal.

According to the process connection, the series SST7 is formed by the following models, they can be identified by the code following the series name:

SST70	Displacer level transmitter
SST71	Float level transmitter
SST72	Temperature transmitter
SST75	Relative or absolute pressure transmitter with incorporate separating diaphragm (ceramic)
SST76	Relative or absolute pressure transmitter with incorporate separating diaphragm (piezo)
SST77B	Differential pressure transmitter
SST77BL	Pressure transmitter for level measure
SST79B	Submersible level transmitter
SST70-REM	Field digital indicator

Model SST70: The transmitter is isolated from the process via a mechanical system to the torsion tube and also the measuring cell presents a separation membrane filled with inert fluid.

Model SST71: The transmitter is isolated from the process via a tube containing reed switches.

Model SST72: The transmitter is isolated from the process via a tube containing sensors PT100.

Models SST75, SST76, SST77B and SST77BL: The transmitter is isolated from the process by membrane separation metal filled with inert fluid.

Model SST79 (version with remote sensor): The remote transmitter is isolated from the process by separation membranes metal filled with inert fluid. It is connected to the housing means shielded cable with 5 wires soldered.

Model SST70-REM (Loop powered field digital indicator): The indicator has no element part but only it is connected via current loop for displaying the desired variable.

Electrical characteristics:

Supply voltage	≤ 30 VDC
Output signal	4 ÷ 20 mA
Maximum power transferred	0,75 W
ATEX category	1/2 G
Protection mode	Ex db IIC T6 Ga/Gb with Tamb [- 40°C, +60°C] Ex db IIB T5 Ga/Gb with Tamb [- 40°C, +80°C]
IP Code	IP 66
The power cables must be at least 22 AWG (0.34mm2 section section - 0.64mm2), suitable for an operating temperature ≥ 90 ° C for Tamb ≥ 70 ° C.	

[16] Report Number:
Inspection report No: 304/5/2017
Final Test Report No: 304/5/2017

[17] Specific Conditions of Use:

Ambient temperature:
Ex db IIC T6 Ga/Gb -40°C ≤ Tamb ≤ 60°C
Ex db IIB T5 Ga/Gb -40°C ≤ Tamb ≤ 80°C

In the case where the process temperatures are higher than the maximum ambient temperature (or lower than the minimum ambient temperature), the equipment is installed with a suitable spacer (example: finned arm, syphon, capillary, remote head, etc.) capable of dissipating the excess temperature and ensure the installation inside the temperature range specified by the manufacturer.

Entries for flameproof enclosure:
The accessories used for cable entry into the housing (which must be treated ½ "NPT) must comply with the standards EN 60079-0 and EN 60079-1.
The entrance hole leads not used should be closed with the cap conforms to EN 60079-1.

Warning marking:
- "WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

Informative marking:
- "SEE INSTALLATION INSTRUCTION DOCUMENT".

[18] Essential Health and Safety Requirements:
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.
Additional information: None.

[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
DTP-SST7X	3pgs	REV No.17.01	31/01/2017	List of drawings and Documents SPRIANO® Electronic Switches SST7X

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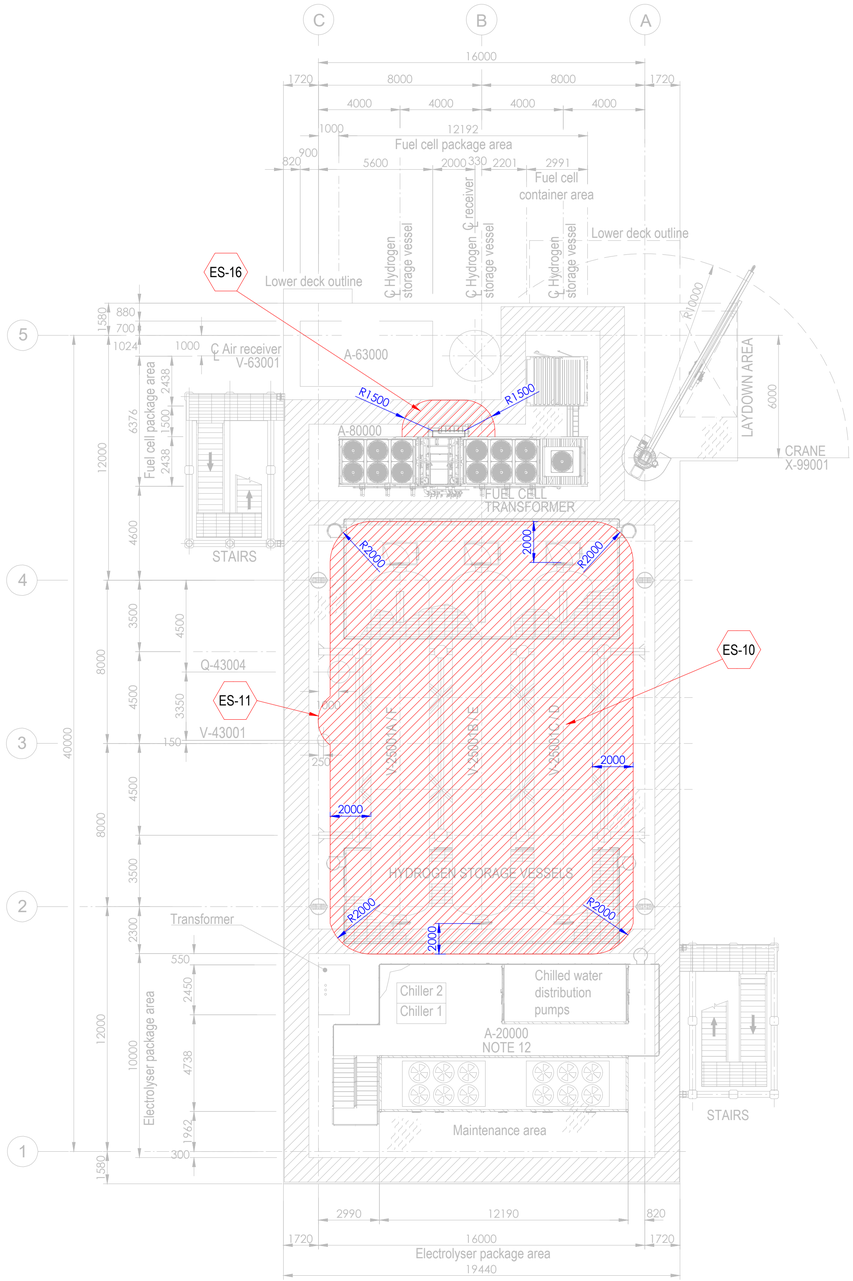
Bratislava, March 13th, 2017

Ing. Dušan Perniš
General Director

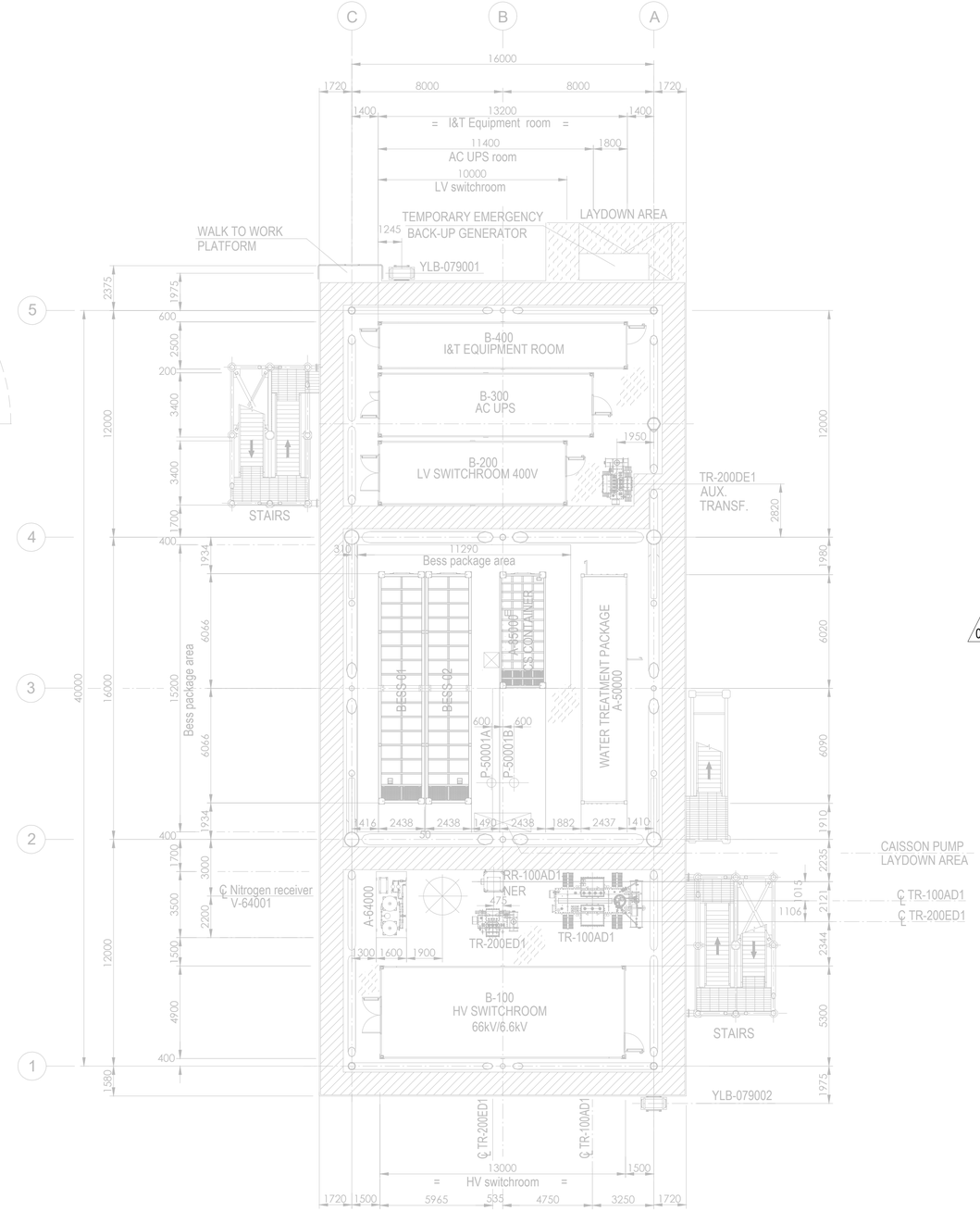
CSTA3-128

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



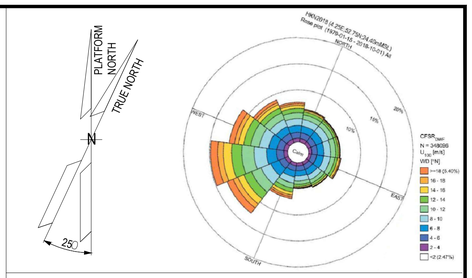
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

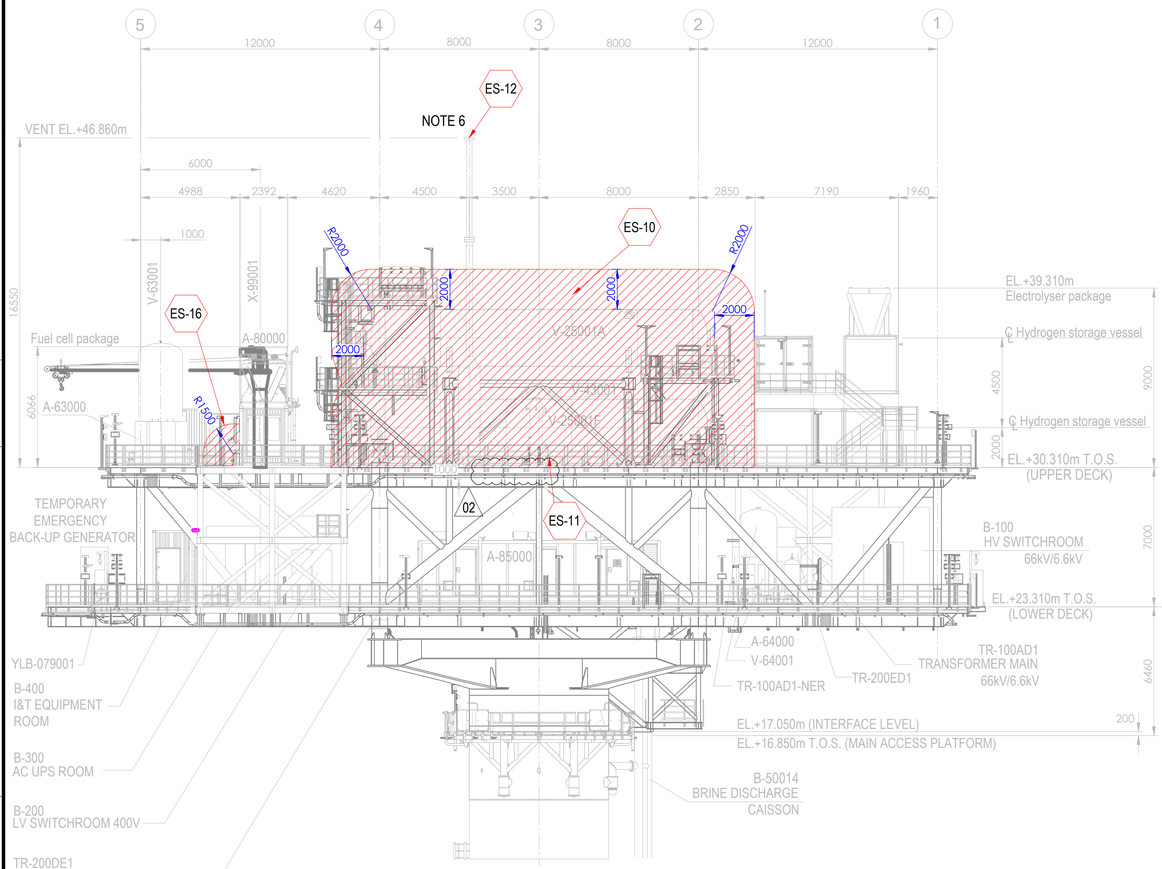
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

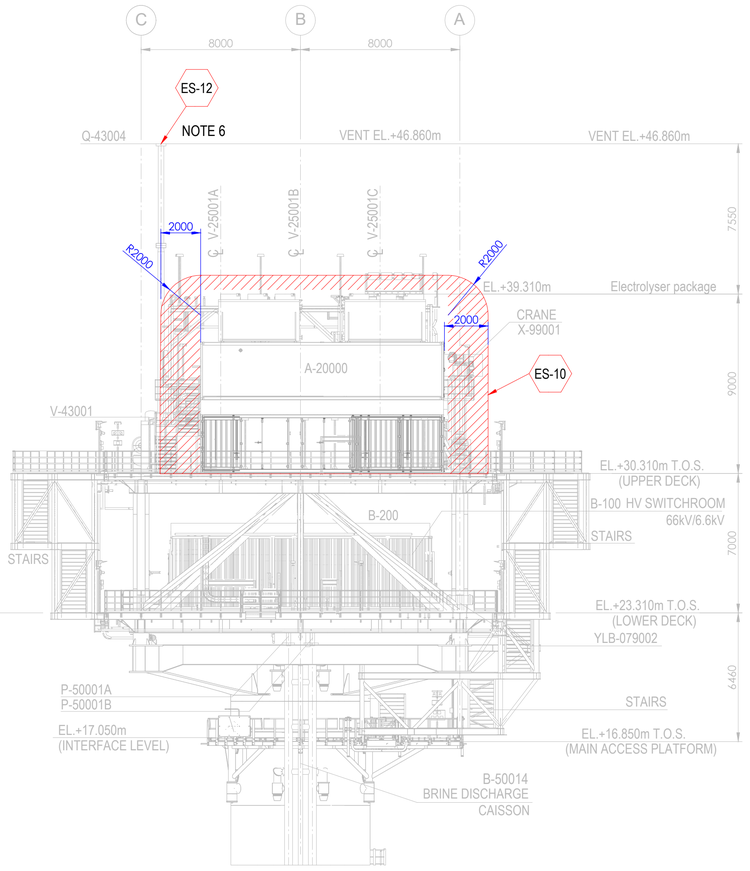
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

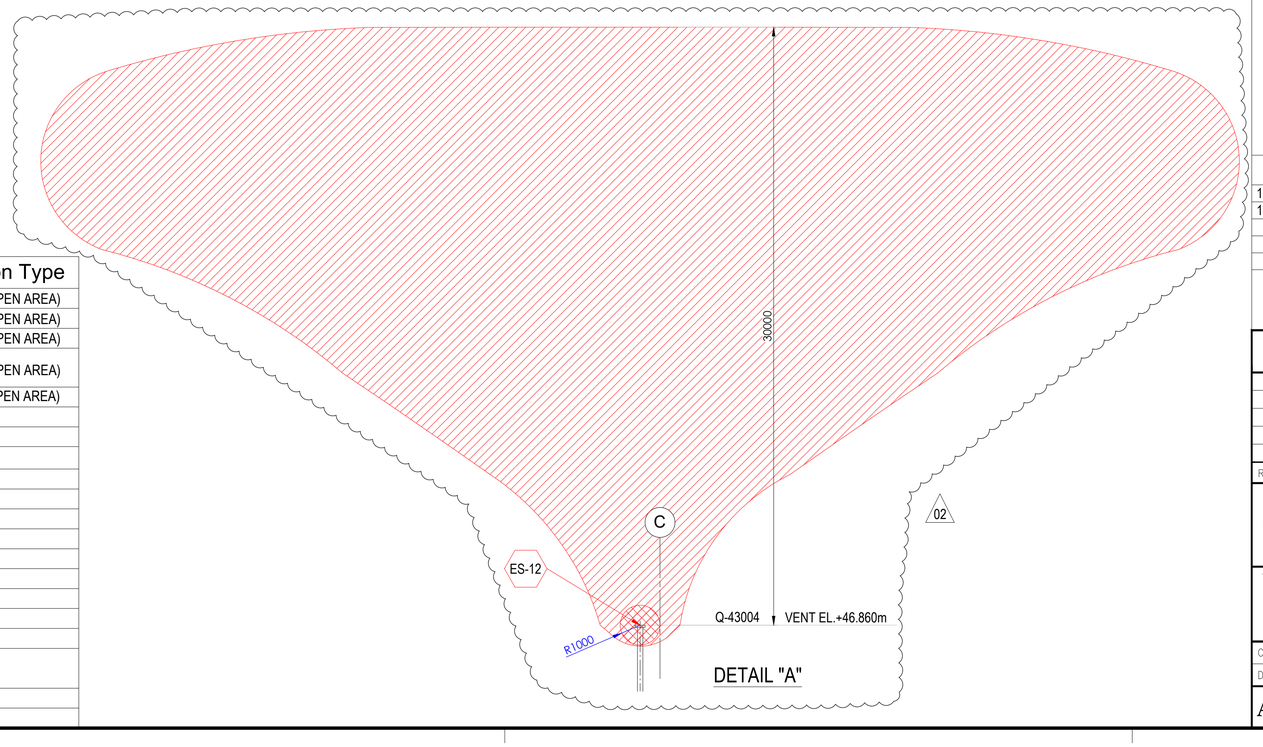


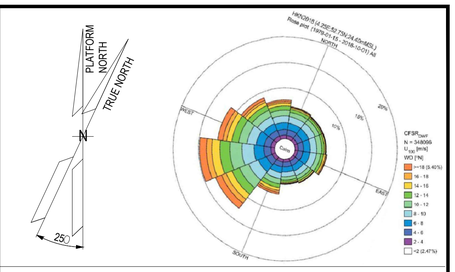
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-BDV-016	: On/Off Valve - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80016		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10001564	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		AF7703006001 (Ball valve SN: 2400620060001)			
Manufacturer	Rotork			**Model**		CP/S-055-200A/BA			
Cert No.	Declaration of Conformity by Manufacturer			**Equipment Ambient Temp.**		-20 °C + 40°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T5	**IP Rating**	IP66/IP67

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-BDV-016	: On/Off Valve - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001564		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	PL	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-BDV-016	: On/Off Valve - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001564		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

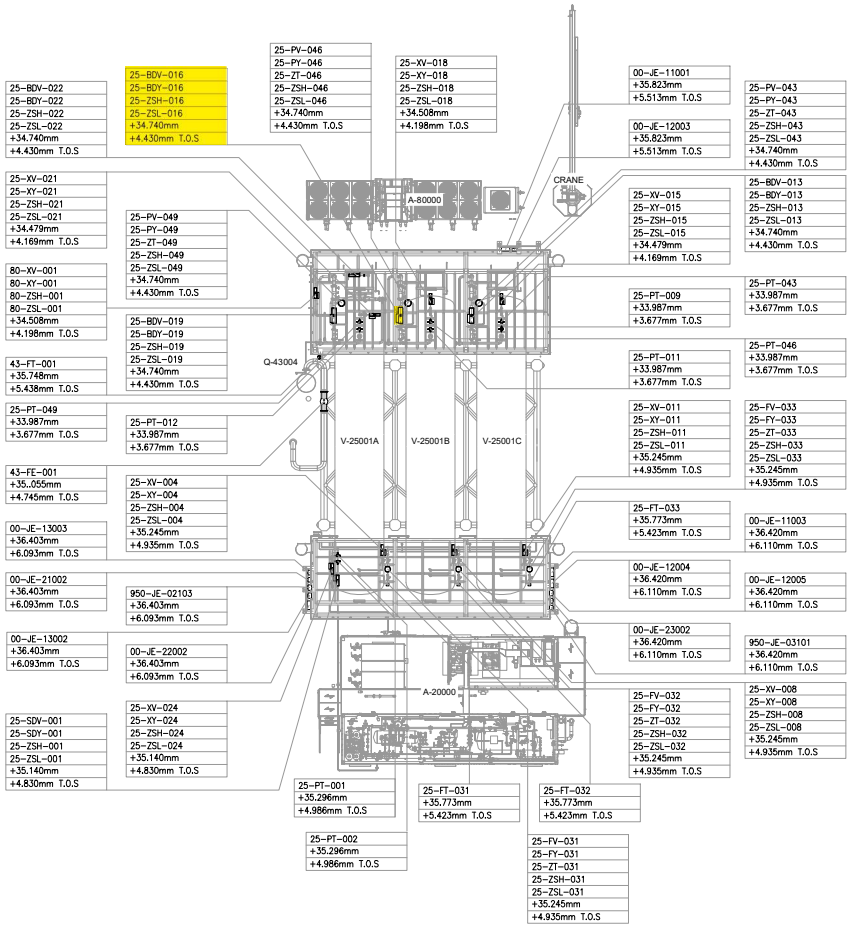
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-04	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:13:33.531Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-17T16:12:48.147Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

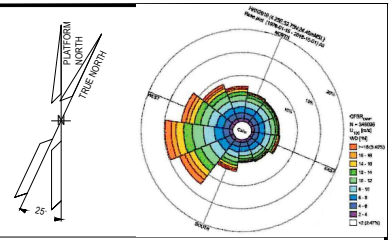
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

File Name : - 123A90-DDL-IN-DL-40081 REV02.dwg

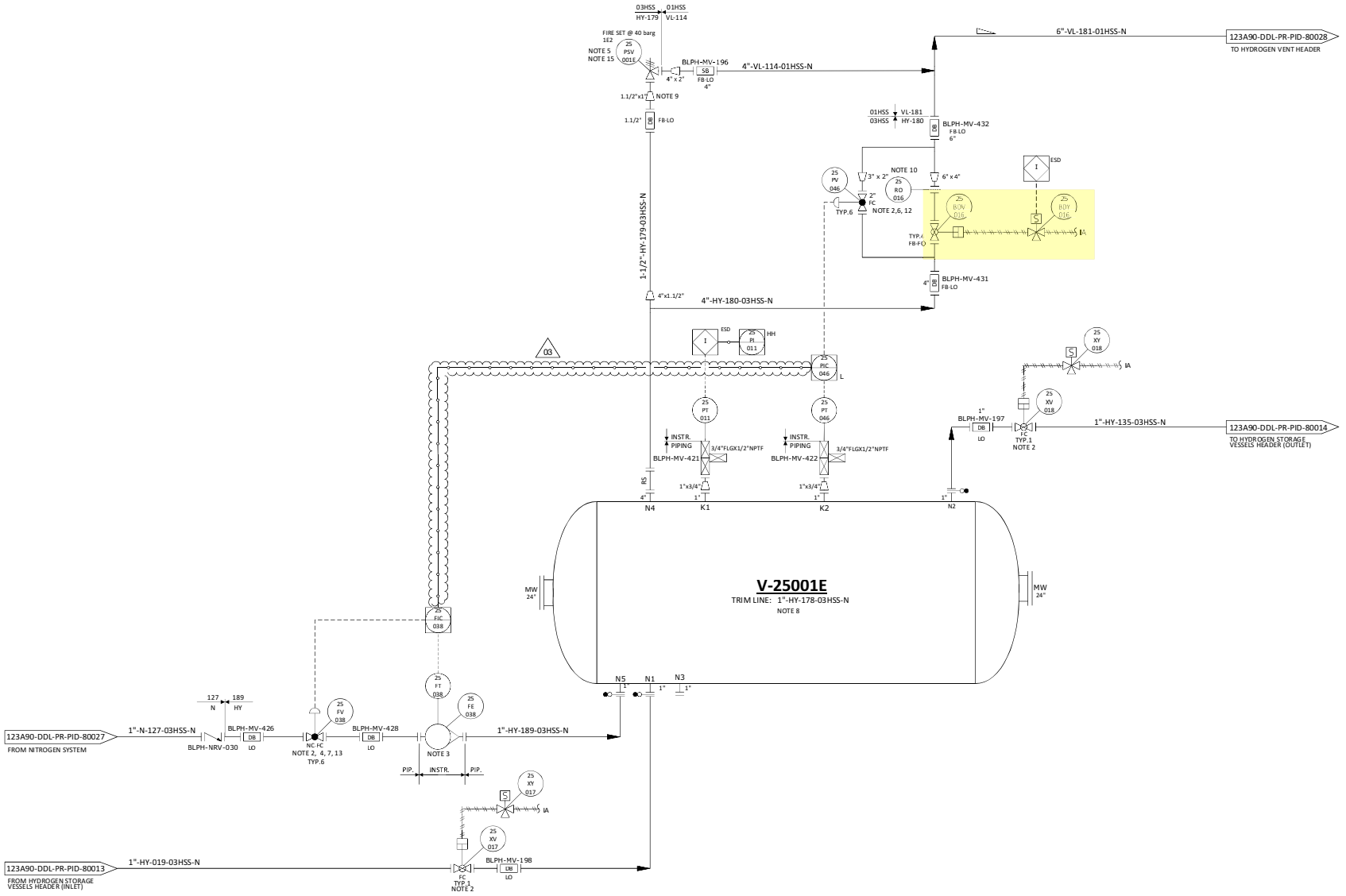
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

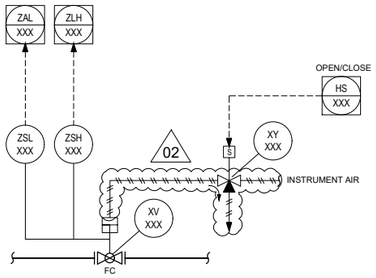
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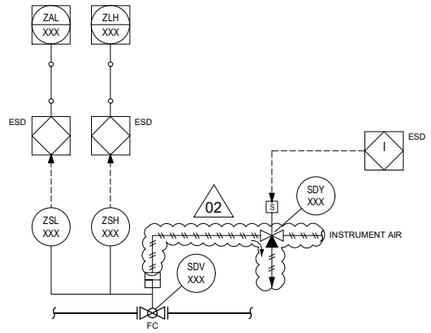
REV. 00

TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

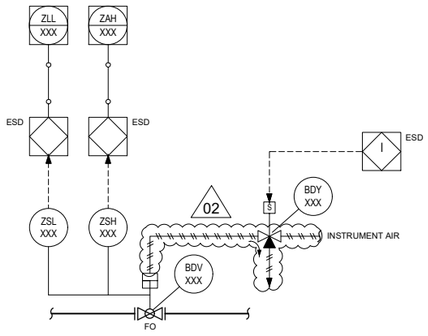


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



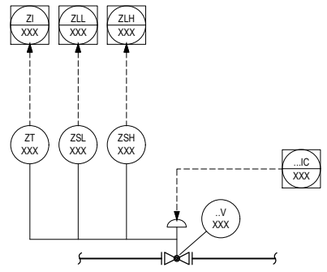
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)



02

TYP.6 (CONTROL VALVES - CRITICAL)



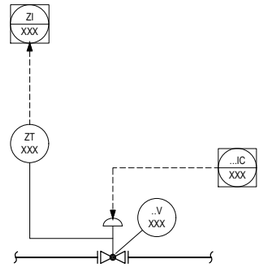
INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

TYP.7 (CONTROL VALVES - NOT CRITICAL)



NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1. DELETED 02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

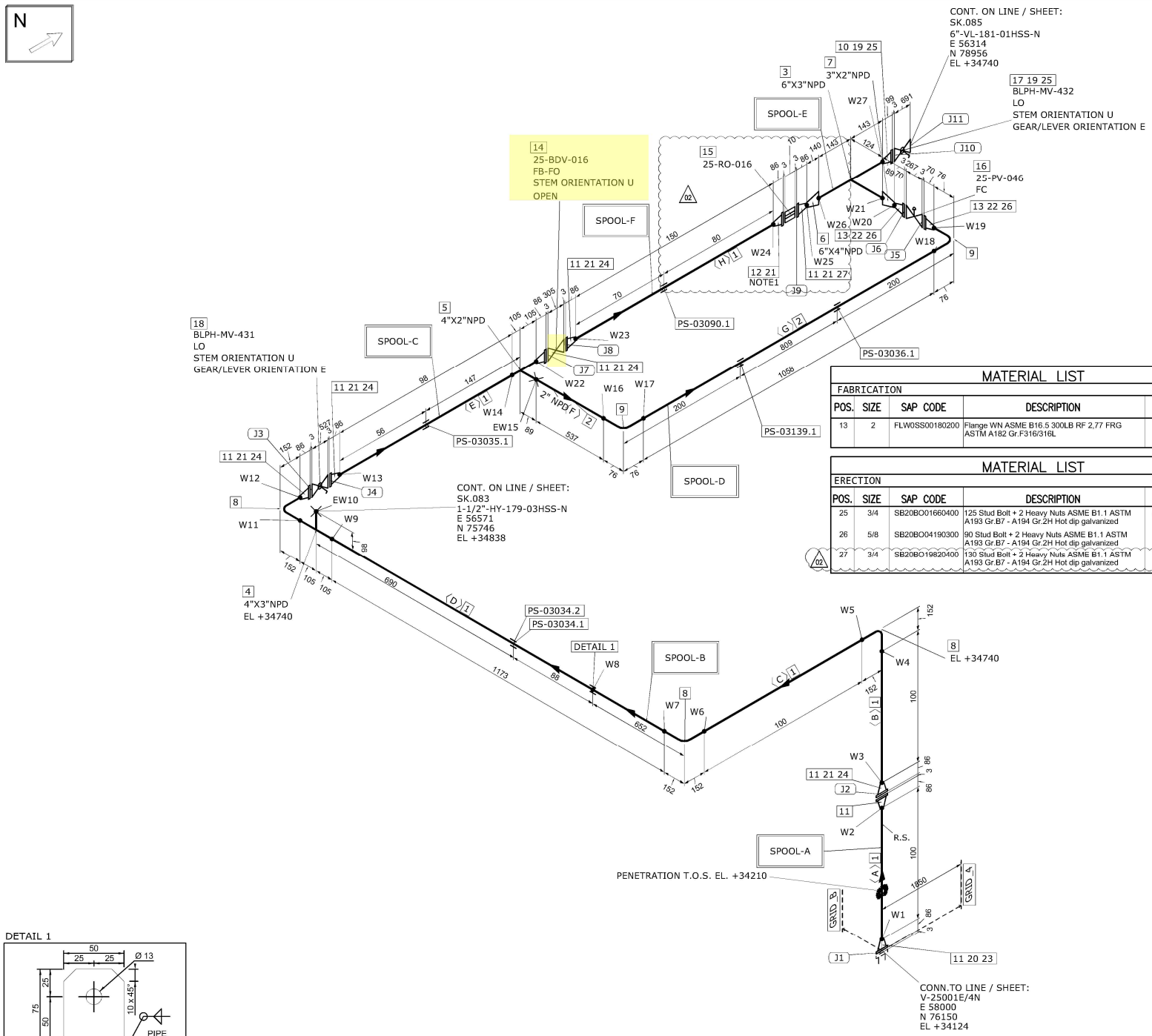
CROSSWIND | ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80042	SHEET 001	REV. 02

File Name :



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

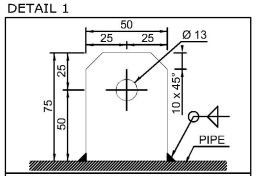
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	800.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

LINE DATA							
NOT INSPECTION CATEGORY	1	PED CATEGORY	III				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

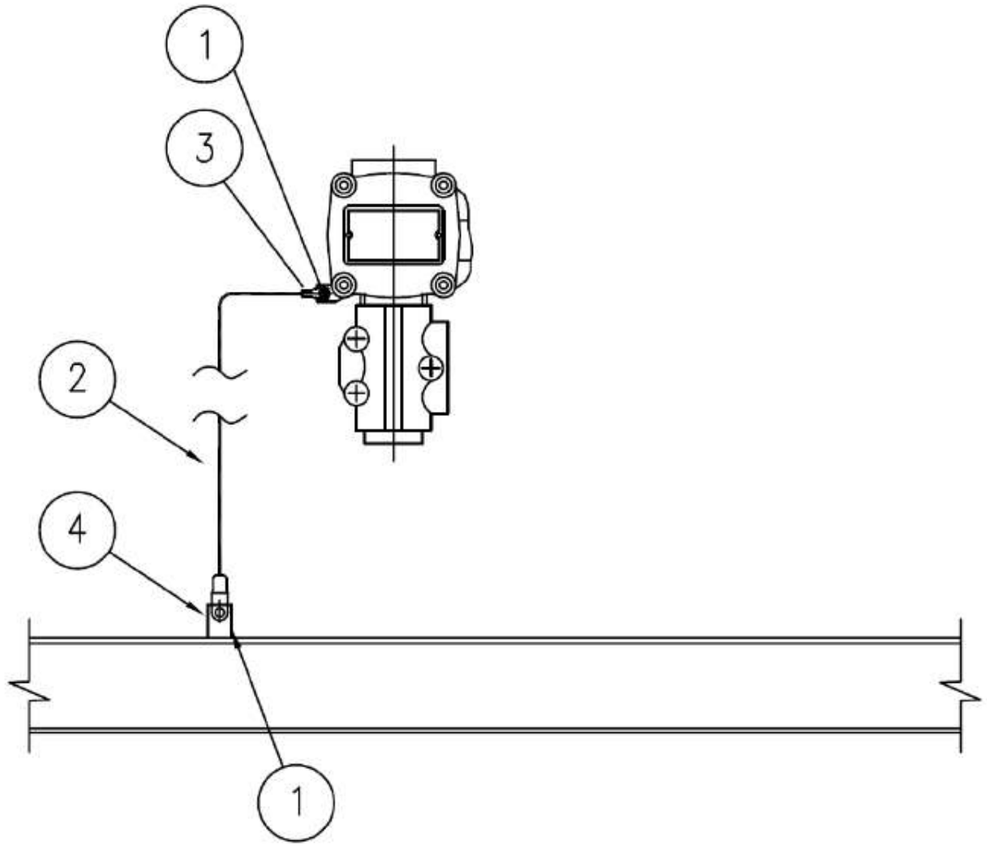
REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	17-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00084
SHEET / OF	1/1
REV.	02

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DD-20090
REV.: 2_I | DATE: 07/11/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

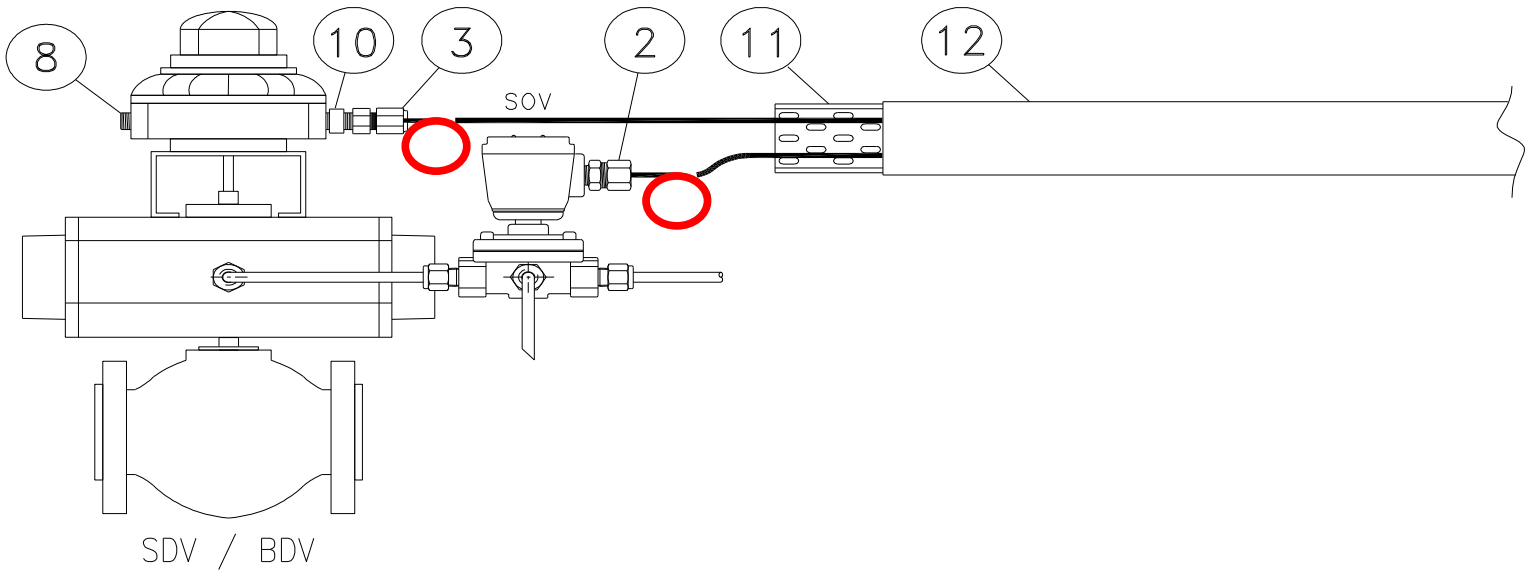
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 16 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR SDV/BDV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



SDV / BDV

INSTRUMENT TAG	
1	25-BDV-005
2	25-BDV-007
3	25-BDV-010
4	25-BDV-013
5	25-BDV-016
6	25-BDV-019
7	25-BDV-022
8	25-SDV-001
9	25-SDV-023
10	64-SDV-001
11	
12	
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
10		Nickel Plated Brass Adaptor Ex-d/e IIC (or IIB + H2) T1	M20 Male x M25 Female	1
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
3		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1

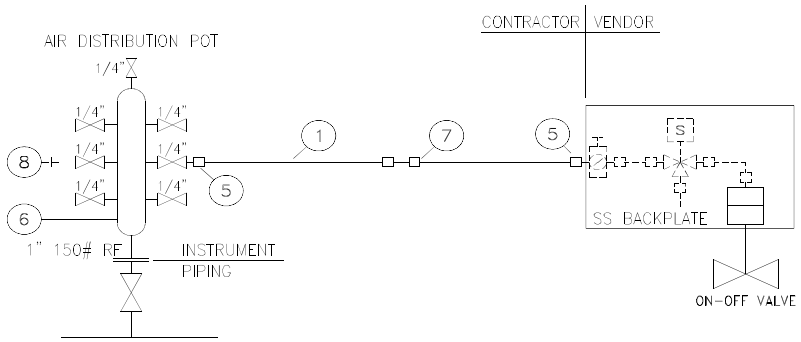
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PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

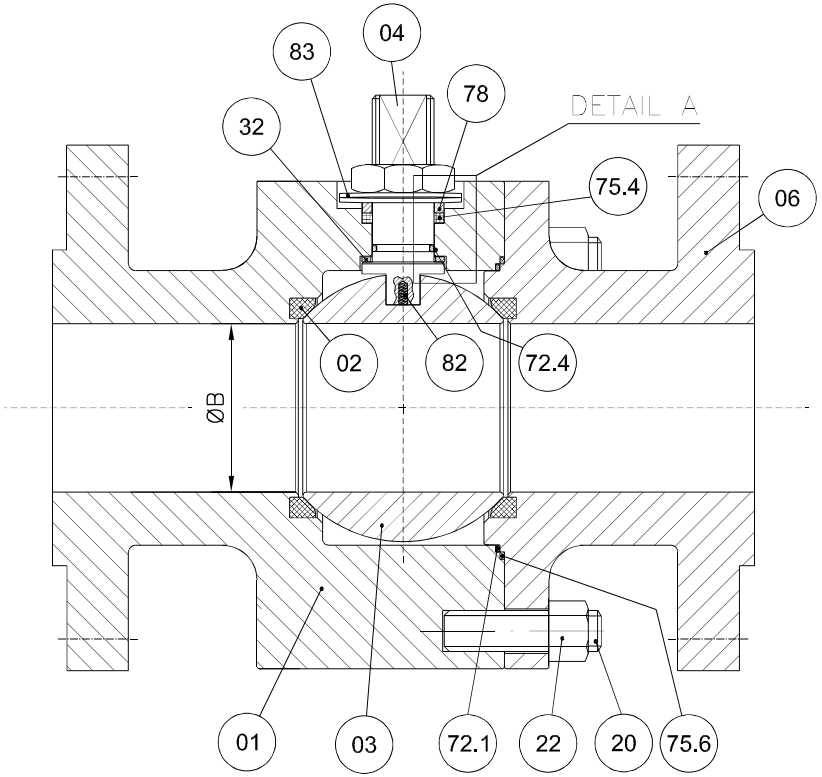


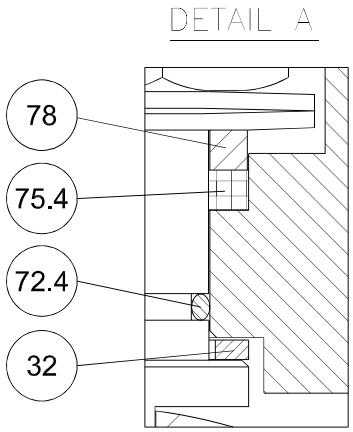
	INSTRUMENT TAG
1	25-BDV-022
2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

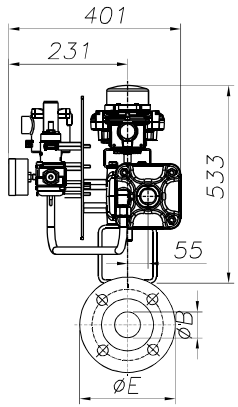
POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

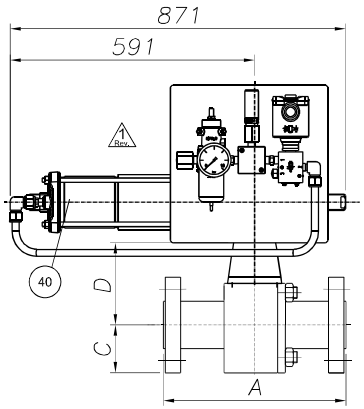
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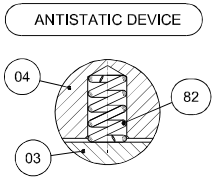




POS.	PART. NAME	MATERIAL
01	BODY	A182 F316/316L
02	SEAT	RPTFE
03	BALL	A182 F316/316L
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F316/316L
20	STUD	A193 B8M
22	NUT	A194 Gr.8M
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

1 Rev.

POS:	ITEM.:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
02	20	BA03C01RFH	25-BDV-005	1	4"	300	RF	305	102	127	209	254	74	95	169
03	30	BA03C01RFH	25-BDV-007	1	4"	300	RF	305	102	127	209	254	74	95	169
04	40	BA03C01RFH	25-BDV-010	1	4"	300	RF	305	102	127	209	254	74	95	169
05	50	BA03C01RFH	25-BDV-013	1	4"	300	RF	305	102	127	209	254	74	95	169
06	60	BA03C01RFH	25-BDV-016	1	4"	300	RF	305	102	127	209	254	74	95	169
07	70	BA03C01RFH	25-BDV-019	1	4"	300	RF	305	102	127	209	254	74	95	169

CUSTOMER :	ROSETTI MARINO S.p.A.						
P.O. N. :	1724000204 123A90A/REV.1						
JOB N. :	240062						
Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

2 Rev.

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-02-03-04-05-06-07

Rev.: 2

GENERAL	1	Tag Number	Location			25-BDV-016		25
	2	Service				HYDROGEN STORAGE TANK V-25001E DEPRESS.		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-180-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED) (35)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close :	(12)	Open : (12)
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form			4"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		(*)
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			A479 Tp 316		(*)
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-BDY-016 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-016 (9, 17) - Soldo SS		25-ZSH-016 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
1	IFR	25-BDV-022	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
2	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
3	N.A		floating ball valve	N.A	FLUITEK	1" 300#	2400620010001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
4	IFR		ACTUATOR	N.A	RFS	CP/S-035-080A/AA	AF771400101	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
5	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
6	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323301	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
7	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
8	IFR	25-BDV-005	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
9	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
10	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620020001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
11	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400201	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
12	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
13	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323309	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
14	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
15	IFR	25-BDV-007	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
16	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
17	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620030001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
18	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400301	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
19	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
20	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323302	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
21	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
22	IFR	25-BDV-010	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
23	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
24	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620040001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
25	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400401	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
26	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
27	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323292	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
28	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
29	IFR	25-BDV-013	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
30	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
31	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620050001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
32	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400501	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
33	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
34	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323305	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
35	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
36	IFR	25-BDV-016	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
37	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
38	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620060001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
39	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400601	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
40	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
41	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323295	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
42	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
43	IFR	25-BDV-019	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
44	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
45	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620070001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
46	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400701	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
00-JE-11001	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11002	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-11003	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-11004	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11005	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12001	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12002	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12003	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12004	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12005	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12006	PCS Digital Input JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13001	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13002	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-13003	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa		CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-21001	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87929	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-21002	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-22001	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87933	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-22002	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87934	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-23001	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-23002	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
25-BDV-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDV-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDV-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-BDY-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDY-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDY-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-FT-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FT-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-FT-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-FT-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FV-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FV-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FV-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FV-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FV-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FV-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FY-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407	II 2G	ATEX - SN 2400583	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FY-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407	II 2G	ATEX - SN 2400584	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FY-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407	II 2G	ATEX - SN 2400585	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FY-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407	II 2G	ATEX - SN 2400586	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FY-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407	II 2G	ATEX - SN 2400587	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FY-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407	II 2G	ATEX - SN 2400588	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-031	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

Fluitek Valves	**CONFORMITY DECLARATION ACCORDING TO EUROPEAN DIRECTIVE 2014/68/UE** DICHIARAZIONE DI CONFORMITÀ AI SENSI DELLA DIRETTIVA EUROPEA 2014/68/UE

THE MANUFACTURER
IL FABBRICANTE

Name Nome	FLUITEK ORSENIGO VALVES S.R.L.
Legal representative and role Legale rappresentante	P. Belotti – Managing Director
Declaration of conformity nr. Dichiarazione di conformità no.	240062
Sede legale Legal office	Via Dei Livelli di Sopra, 7/5 – 24060 COSTA DI MEZZATE (BERGAMO) – ITALY
Sede produttiva Operational office	Via Dei Livelli di Sopra, 7/5 – 24060 COSTA DI MEZZATE (BERGAMO) – ITALY
E-mail E-mail	info@fluitekvalves.com
Website Sito internet	www.fluitekvalves.com
Telephone Telefono	+39 035 666 501
Fax Fax	+39 035 666 5047

DECLARE THAT THE FOLLOWING PRESSURE EQUIPMENT
DICHIARA CHE I SEGUENTI ACCESSORI A PRESSIONE

JOB	FOV Pos.	Serial Number	Client Item	PO N.	Description	Quantity
240062	001	2400620010001	10	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	002	24000620020001	20	1724000204 123A90A	Ball valve 4'' 300#	**1**
240062	003	2400620030001	30	1724000204 123A90A	Ball valve 4'' 300#	**1**
240062	004	2400620040001	40	1724000204 123A90A	Ball valve 4'' 300#	**1**
240062	005	2400620050001	50	1724000204 123A90A	Ball valve 4'' 300#	**1**
240062	006	2400620060001	60	1724000204 123A90A	Ball valve 4'' 300#	**1**
240062	007	2400620070001	70	1724000204 123A90A	Ball valve 4'' 300#	**1**
240062	008	2400620080001	80	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	009	2400620090001	90	1724000204 123A90A	Ball valve 1-1/2'' 300#	**1**
240062	010	2400620100001	100	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	011	2400620110001	110	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	012	2400620120001	120	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	013	2400620130001	130	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	014	2400620140001	140	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	015	2400620150001	150	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	016	2400620160001	160	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	017	2400620170001	170	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	018	2400620180001	180	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	019	2400620190001	190	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	020	2400620200001	200	1724000204 123A90A	Ball valve 1'' 300#	**1**

Fluitek Valves	**CONFORMITY DECLARATION ACCORDING TO EUROPEAN DIRECTIVE 2014/68/UE** DICHIARAZIONE DI CONFORMITÀ AI SENSI DELLA DIRETTIVA EUROPEA 2014/68/UE

240062	021	2400620210001	210	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	022	2400620220001	220	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	023	2400620230001	230	1724000204 123A90A	Ball valve 1'' 300#	**1**
240062	024	2400620240001	240	1724000204 123A90A	Ball valve 1-1/2'' 150#	**1**
240062	025	2400620250001	250	1724000204 123A90A	Ball valve 1'' 150#	**1**
240062	026	2400620260001	260	1724000204 123A90A	Ball valve 1-1/2'' 150#	**1**
240062	027	2400620270001	270	1724000204 123A90A	Ball valve 1'' 150#	**1**
240062	028	2400620280001	280	1724000204 123A90A	Ball valve 1'' 150#	**1**

MET THE REQUIREMENTS OF DIRECTIVE 2014/68/UE
SONO CONFORMI AI REQUISITI DELLA DIRETTIVA 2014/68/UE

Conformity assessment procedure used: Procedura di valutazione di conformità utilizzata:	Module H annex III of Directive 2014/68/UE Modulo H Allegato III della Direttiva 2014/68/UE
Notified Body charged of conformity assessment: Organismo Notificato incaricato della valutazione di conformità:	Bureau Veritas (Notified Body No.1370) Bureau Veritas (Ente Notificato N°1370)
Not armonized standards applied to design and manufacture: Norme non armonizzate applicate alla progettazione e alla fabbricazione:	ASME B16.34, ASME VIII, ASME IX, UNI EN 1503 Part.2 ASME B16.34, ASME VIII, ASME IX, UNI EN 1503 Part.2
Classificazione dei fluidi condotta in conformità ai requisiti del	Regolamento CLP CE 1272/2008 Fluid group: **1**

Place COSTA DI MEZZATE (BG), Italy
Luogo COSTA DI MEZZATE (BG), Italia

Date 14/01/2025
Data



Signature
Firma

Fluitek Valves	**DECLARATION OF CONFORMITY ATEX 2014/34/EU** *Dichiarazione di Conformità ATEX 2014/34/EU*	**Cert. DDC No.** **240062 ATEX**

GENERAL INFORMATION – *INFORMAZIONI GENERALI*

Customer ***Cliente***	ROSETTI MARINO S.P.A.		
P. Order ***Ordine***	1724000204 123A90A	**Item/s** ***Item/s***	ALL
FOV Job ***Commessa FOV***	240062	**Position/s** ***Posizione/i***	ALL
Subject ***Oggetto***	BALL VALVE		
Date of execution ***Data di esecuzione***	24/07/2024		

STATEMENT – *DICHIARAZIONE*

We declare that this product has been manufactured in accordance with the Euporean Directive 2014/34/EU to the classification II 2 G/D Tx c.
Technical standards and specifications used are referenced in the Fluitek Orsenigo valves above stated internal job.
The equipment satisfies the provision of directive 2014/34/EU and of standards EN 1127-1, UNI CEI EN ISO 80079-36:2016.
Technical file deposited to Notified Body TUV RHEINLAND 0035.

REMARKS – *NOTE*

SIGNATURE – *FIRME*

Inspection Authority ***Ente Ispettivo***	**Customer Inspector** ***Ispettore Cliente***	**Quality Control** ***Controllo qualità***
		FLUITEK ORSENIGO VALVES S.R.L. Q.C.

rotork Fluid Systems	EU Declaration of Conformity	Rif. JOB nr: AF7703

Manufacturer: Rotork Fluid Systems S.r.l.

Address: Via Padre Jacques Hamel, 138/B
55016 Porcari, Lucca – Italy
Tel. +39 0583 2221
Fax. +39 0585 091362

Section PED: ☐ Applicable ☒ Not Applicable

Under its sole responsibility declares that the items specified below have been designed, manufactured, inspected and tested as required by the relevant provisions of the Pressure Equipment Directive 2014/68/UE.
The equipment has been submitted to the following conformity assessment procedures:

☐**Module H**: **CE-1370-PED-H-RTK 001-23-ITA** **Serial No.:**

☐ **Module H1**: **CE-1370-PED-H1-RTK 001-23-ITA** **Serial No.:**
CE-1370-PED-H1D-RTK 001-20-ITA
CE-1370-PED-H1D-RTK 002-20-ITA

Notified Body: Bureau Veritas Italia SPA Viale Monza 347 20126 MI – Italy
NB Number: 1370

Description: The pressure equipment is a part pressure of pneumatic actuator that is product of Rotork Fluid Systems for quart turn and linear valve. It is composed by a cylinder can and two flanges packaged by tie rods.

Other technical standards and specifications used:
VSR rev.1995; RACCOLTA "M"; RACCOLTA "S"; AD 2000-Merkblatt; ASME VIII Div.1/Div.2; ASME II; EN 13445-3

Section ATEX:

Under its sole responsibility declares that the actuators model:

☒ **GP/GH, CP/CH, RP/RH, LP/LH, HPG, HPL MARKED:** **II 2 G Ex h IIC T5 Gb X**
II 2 D Ex h IIIC T100°C Db X
IP 66M/67M

to which this declaration refers, are in compliance with the following European Directive: **ATEX 2014/34/EU** and they are manufactured according to the following harmonized standards:
EN 12100 / EN ISO 80079-36 / EN ISO 80079-37 / EN ISO4413 / EN ISO4414 / EN 60529

☐ **CQP/CQH MARKED:** **II 2 G Ex h IIC T5 Gb X**
II 2 D Ex h IIIC T100°C Db X
IP 66/68

to which this declaration refers, are in compliance with the following European Directive: **ATEX 2014/34/EU** and they are manufactured according to the following harmonized standards:
EN 12100 / EN ISO 80079-36 / EN ISO 80079-37 / EN ISO4413 / EN ISO4414 / EN 60529

☐ **GO, GOL, EH MARKED:** **II 2 G Ex 60079-46 II_ T_ _ X**
(II 2 D Ex 60079-46 III_ T_ _X)
IP 6_

to which this declaration refers, are in compliance with the following European Directive: **ATEX 2014/34/EU** and they are manufactured according to the following harmonized standards:
EN 12100 / EN ISO 80079-36 / EN ISO 80079-37 / EN ISO4413 / EN ISO4414 / IEC 60079-46, EN 60529

The conformity has been evaluated according to ***Annex VIII (Article 13, Point 1. (b)(ii))*** *of* ***ATEX 2014/34/EU*** *directive.*
TECHNICAL FILE N° TR 219 *(Receipt Number:* ***BVI/ATEX/ITA/24/080*** *Bureau Veritas ITA)*

Section API 6DX: ☐ Applicable ☒ Not Applicable

Under its sole responsibility, the Manufacturer declares that the items specified above have been designed, manufactured, inspected, and tested as required by the applicable provisions of the current edition of the product standard API 6DX and all addenda.

SIGNED ON BEHALF OF ROTORK FLUID SYSTEMS S.R.L. (authorized representative of):

Legal Representative: Metin Gerceker **Signature:**

Place / date: Porcari / 05/02/2025

ITEM	Tag	25-BDY-016	: Solenoid Valve - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001571	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	FL10524-1556				
Manufacturer	Bifold			**Model**	FP86P-77A				
Cert No.	baseefa10ATEX0026			**Equipment Ambient Temp.**	-60°C +40°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66/67

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	OK	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	25-BDY-016	: Solenoid Valve - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001571	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	OK	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-BDY-016	: Solenoid Valve - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001571	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline ATEX	Form CJX01		Hazardous Area Equipment Detailed Inspection

	Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA		
68	Hermetically sealed and enclosed break devices are undamaged	x	NA		
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA		
70	Test port, if fitted, is functional (type “nR” only)	x	NA		
71	Breathing operation is satisfactory (type “nR” only)	x	NA		
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA		
73	The ventilation airflow is not impeded	x	NA		
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA		
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA		
76	Variable voltage/frequency installation complies with documentation	x	NA		
	Extra Ex p checks				
77	Pressurization gas is correct type	x	NA		
78	Actual pressure is within maximum and minimum settings for equipment	x	NA		
79	Timers set as per certification documentation	x	NA		
80	Alarms and trip functions operate correctly as per certification documentation	x	NA		
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA		
82	Automatic electrical protective devices operate within permitted limits	x	NA		
83	Automatic electrical protective devices are set correctly	x	NA		
84	Protective gas inlet temperature is below maximum specified	x	NA		
85	Ducts, pipes and enclosures are in good condition	x	NA		
86	Protective gas is substantially free from contaminants	x	NA		
87	Protective gas pressure and/or flow is adequate	x	NA		
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA		
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA		
90	Specific conditions of use (if applicable) are complied with		NA		
	Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA		
92	Cables are installed in accordance with the documentation	x	NA		
93	Segregation is maintained between IS and non-IS Circuits	x	NA		
94	Cable screens are isolated at one end (field side)	x	NA		
95	Cable screens are earthed in accordance with the documentation	x	NA		
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA		
97	Equipment installed is the one specified in the documentation	x	NA		
98	Ambient temperature range of the apparatus is correct for the installation	x	NA		
99	Service temperature range of the apparatus is correct for the installation	x	NA		
100	Installation is clearly labelled	x	NA		
101	Printed circuit boards are clean and undamaged	x	NA		
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA		
103	Point-to-point connections are all correct	x	NA		
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA		
105	Earth connections maintain the integrity of the type of protection	x	NA		
106	Intrinsically safe circuit earthing is satisfactory	x	NA		
107	Insulation resistance is satisfactory	x	NA		
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA		

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

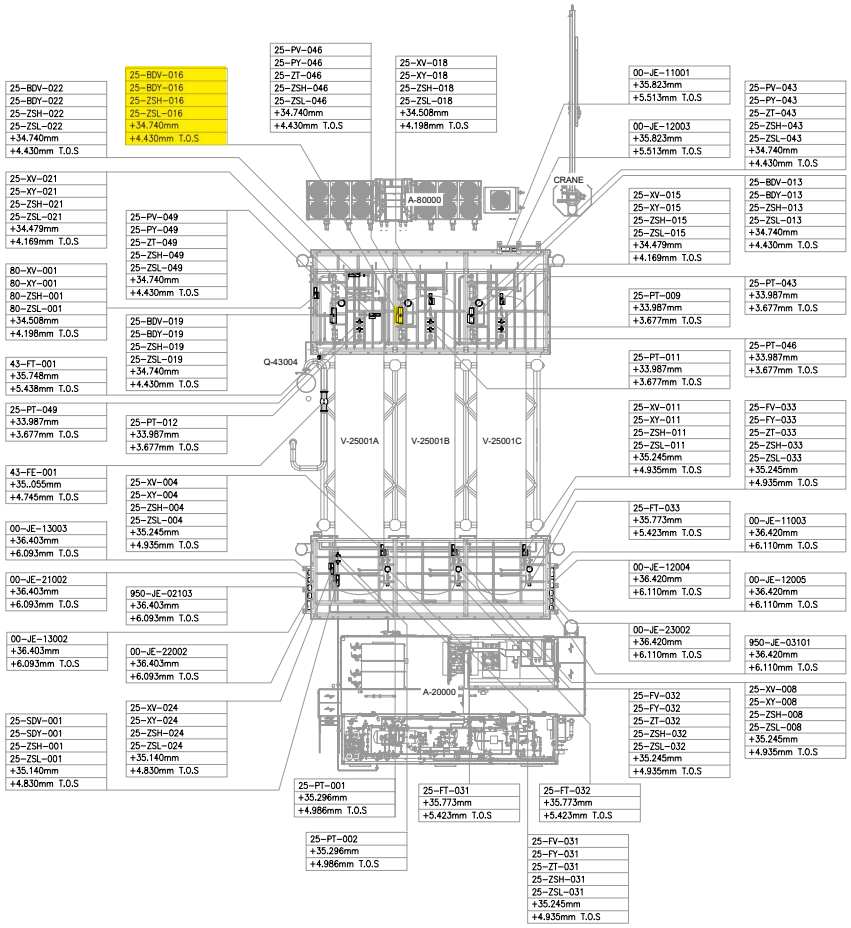
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-04	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:13:53.240Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T16:14:42.593Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

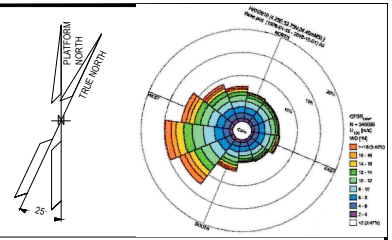
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

File Name : - 123A90-DDL-IN-DL-40081 REV02.dwg

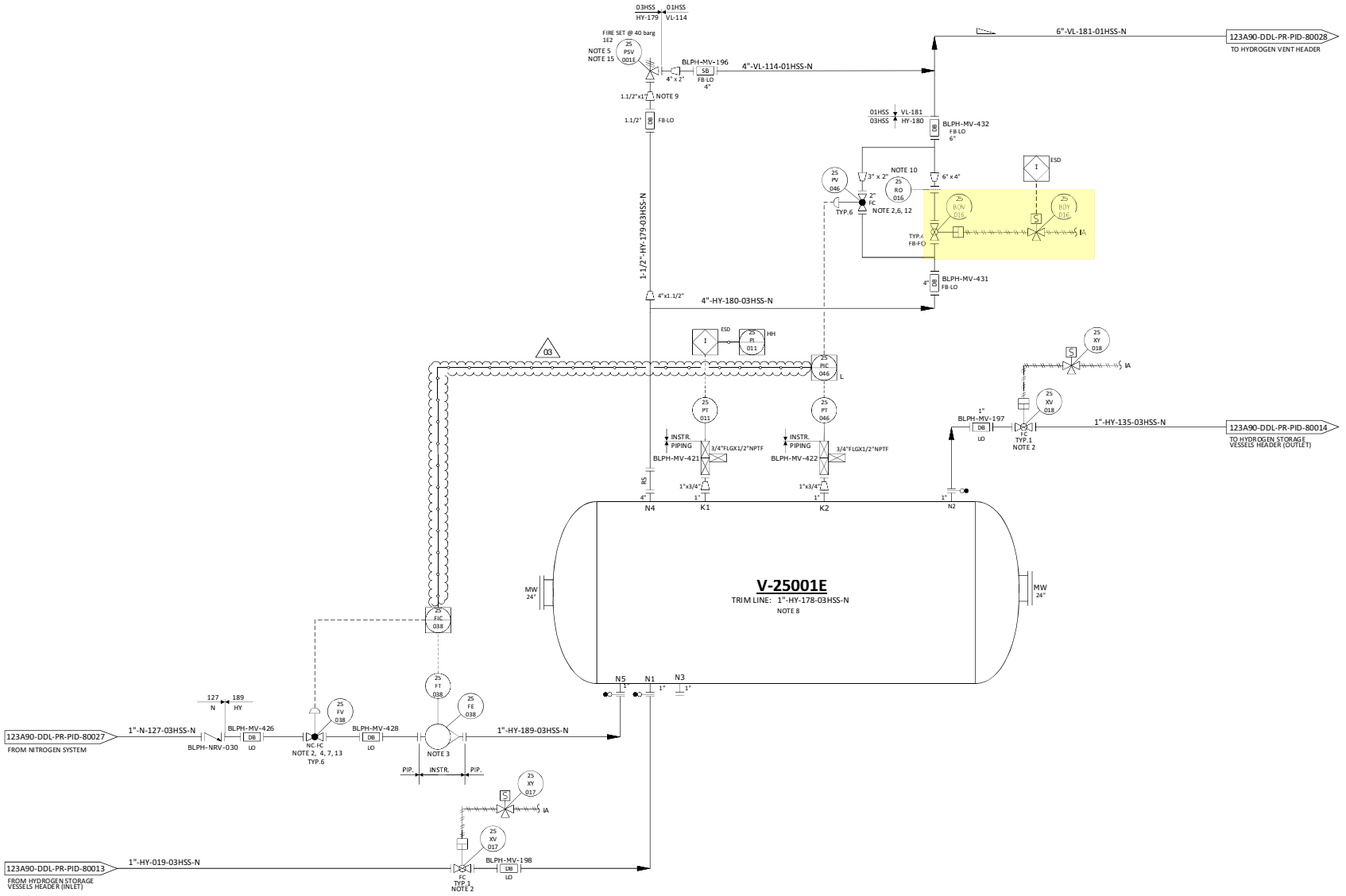
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

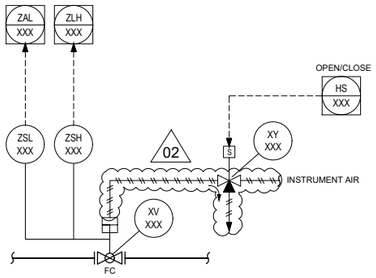
File Name : FILE_NAME

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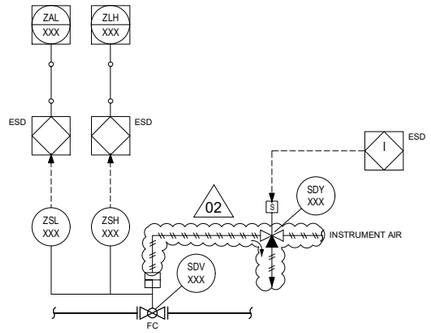
REV. 00

TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

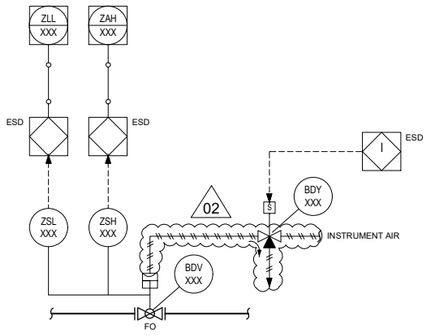


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



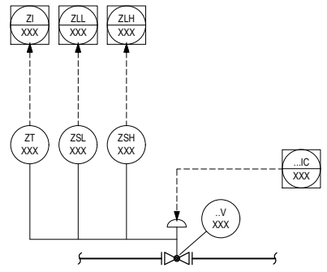
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)



02

TYP.6 (CONTROL VALVES - CRITICAL)



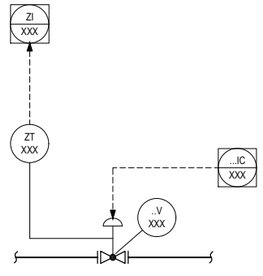
INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

TYP.7 (CONTROL VALVES - NOT CRITICAL)



NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1. DELETED 02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND | ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80042	SHEET 001	REV. 02

File Name :

DRAWING NO. 123A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-23001	No.	MARSHALLING CABINET B400-SIS-001

<01>

INSTRUMENTS		JUNCTION BOX 00-JE-23001		MULTICABLE No.	MARSHALLING CABINET B400-SIS-001
25-BDY-005	C-25-BDY-005/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	TB-1	1BK 1 1BK 2BK 2 2BK	00-JE-23001/B400-SIS-001 12x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	TB-00-JE-23001 1BK 1 25-BDY-005
25-BDY-007	C-25-BDY-007/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		SH 3BK 3 3BK 4BK 4 4BK		2BK 2 3BK 3 4BK 4 25-BDY-007
25-BDY-010	C-25-BDY-010/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		SH 5BK 5 5BK 6BK 6 6BK		5BK 5 6BK 6 25-BDY-010
25-BDY-013	C-25-BDY-013/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		SH 7BK 7 7BK 8BK 8 8BK		7BK 7 8BK 8 25-BDY-013
25-BDY-016	C-25-BDY-016/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		SH 9BK 9 9BK 10BK 10 10BK		9BK 9 10BK 10 25-BDY-016
25-BDY-019	C-25-BDY-019/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		SH 11BK 11 11BK 12BK 12 12BK		11BK 11 12BK 12 25-BDY-019
			SH 13 13BK 14 14BK SH 15 15BK 16 16BK SH 17 17BK 18 18BK SH 19 19BK 20 20BK SH 21 21BK 22 22BK SH 23 23BK 24 24BK SH OS		Shield Bar I.E.

NOTE-2

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40016

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

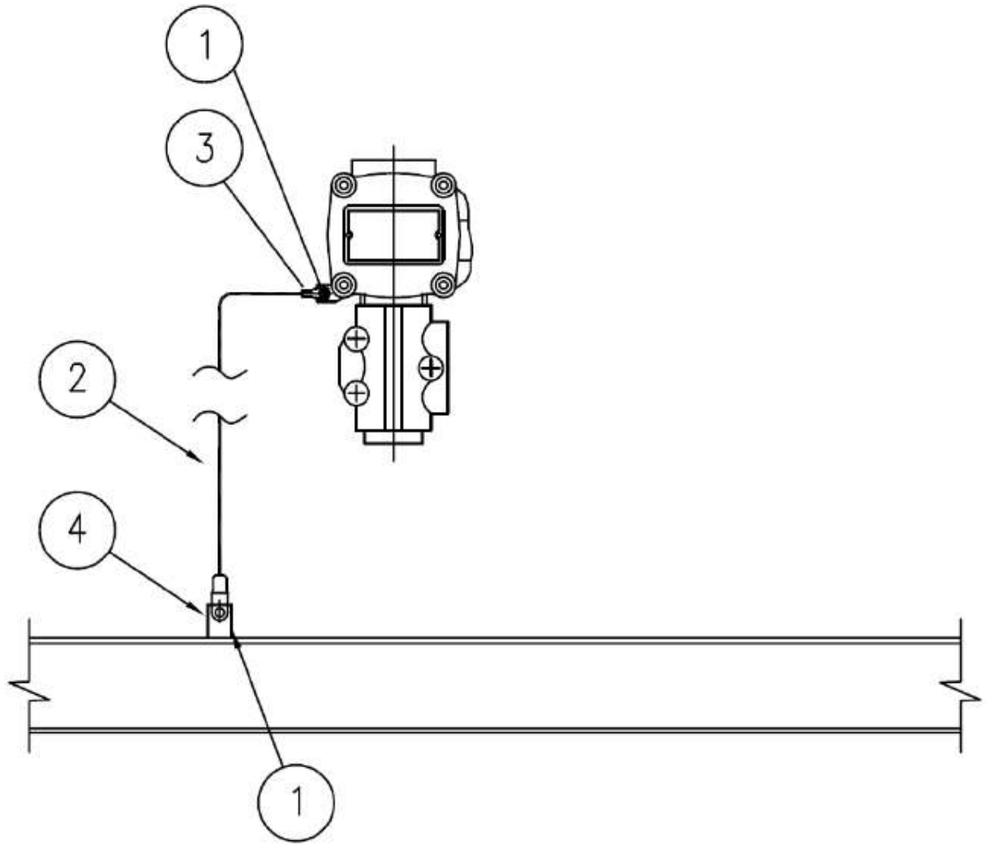
TITLE : BASE LOAD POWER HUB (BLPH)
I INSTRUMENT– SAFETY SYSTEM WIRING DIAGRAMS
00–JE–23001

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 018	REV. 01

File Name : 123A90-DDL-IN-DG-40016_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

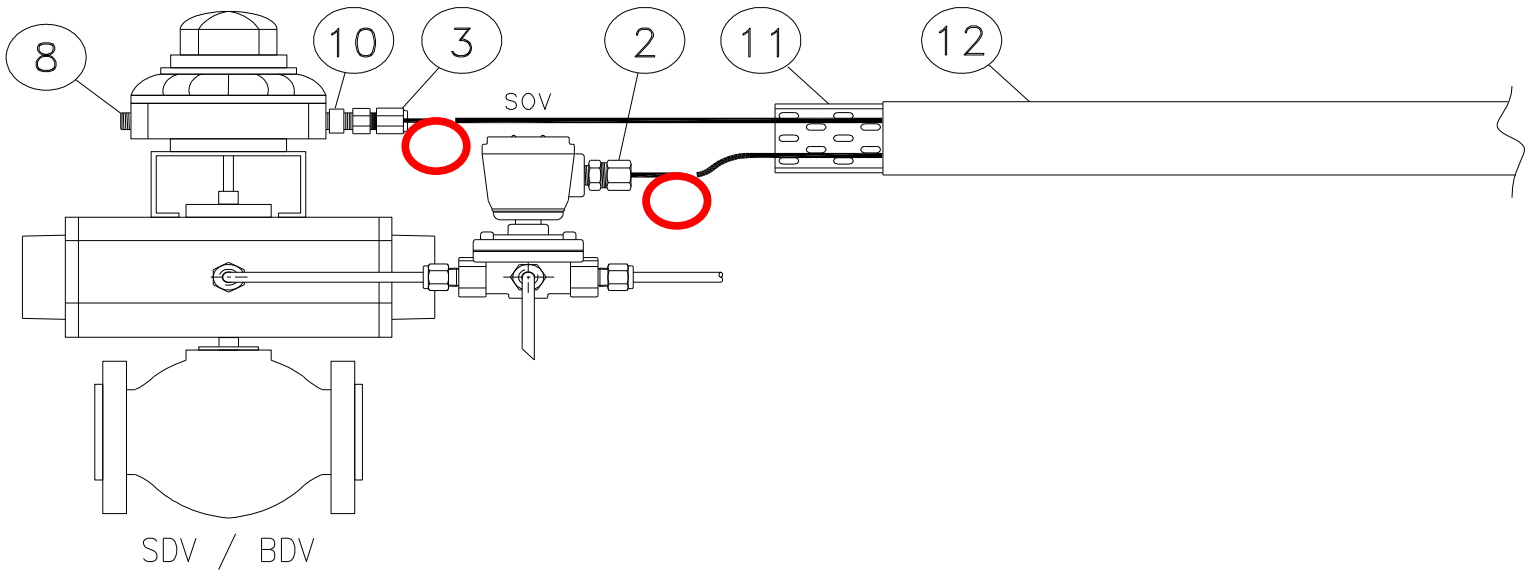
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 16 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR SDV/BDV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



SDV / BDV

INSTRUMENT TAG	
1	25-BDV-005
2	25-BDV-007
3	25-BDV-010
4	25-BDV-013
5	25-BDV-016
6	25-BDV-019
7	25-BDV-022
8	25-SDV-001
9	25-SDV-023
10	64-SDV-001
11	
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NOTE:

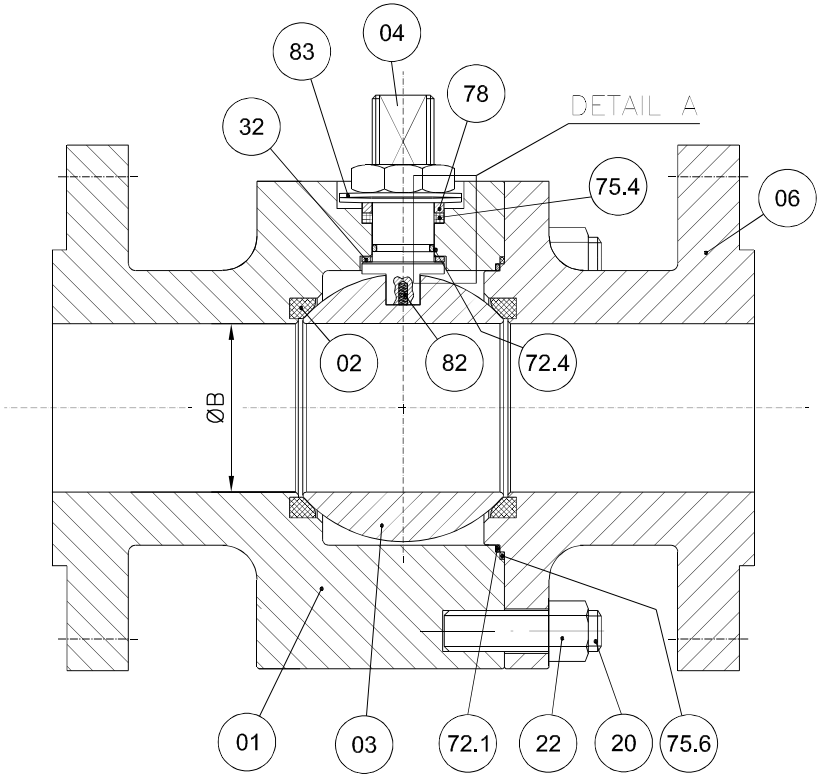
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

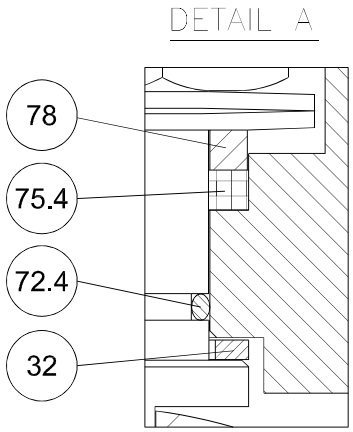
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

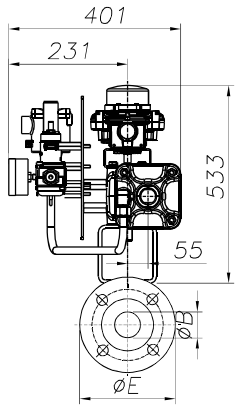
POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
10		Nickel Plated Brass Adaptor Ex-d/e IIC (or IIB + H2) T1	M20 Male x M25 Female	1
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
3		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1

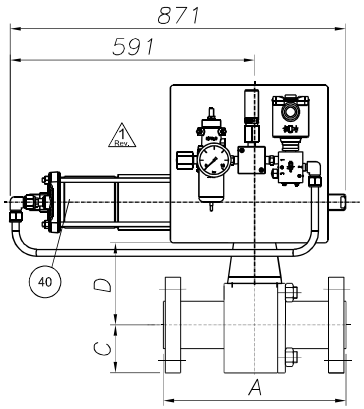
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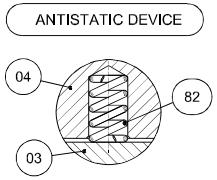




POS.	PART. NAME	MATERIAL
01	BODY	A182 F316/316L
02	SEAT	RPTFE
03	BALL	A182 F316/316L
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F316/316L
20	STUD	A193 B8M
22	NUT	A194 Gr.8M
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

1 Rev.

POS:	ITEM.:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
02	20	BA03C01RFH	25-BDV-005	1	4"	300	RF	305	102	127	209	254	74	95	169
03	30	BA03C01RFH	25-BDV-007	1	4"	300	RF	305	102	127	209	254	74	95	169
04	40	BA03C01RFH	25-BDV-010	1	4"	300	RF	305	102	127	209	254	74	95	169
05	50	BA03C01RFH	25-BDV-013	1	4"	300	RF	305	102	127	209	254	74	95	169
06	60	BA03C01RFH	25-BDV-016	1	4"	300	RF	305	102	127	209	254	74	95	169
07	70	BA03C01RFH	25-BDV-019	1	4"	300	RF	305	102	127	209	254	74	95	169

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-02-03-04-05-06-07

Rev.: 2

GENERAL	1	Tag Number	Location			25-BDV-016		25
	2	Service				HYDROGEN STORAGE TANK V-25001E DEPRESS.		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-180-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED) (35)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close :	(12)	Open : (12)
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form			4"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		(*)
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			A479 Tp 316		(*)
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-BDY-016 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-016 (9, 17) - Soldo SS		25-ZSH-016 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
1	IFR	25-BDV-022	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
2	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
3	N.A		floating ball valve	N.A	FLUITEK	1" 300#	2400620010001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
4	IFR		ACTUATOR	N.A	RFS	CP/S-035-080A/AA	AF771400101	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
5	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
6	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323301	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
7	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
8	IFR	25-BDV-005	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
9	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
10	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620020001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
11	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400201	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
12	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
13	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323309	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
14	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
15	IFR	25-BDV-007	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
16	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
17	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620030001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
18	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400301	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
19	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
20	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323302	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
21	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
22	IFR	25-BDV-010	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
23	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
24	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620040001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
25	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400401	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
26	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
27	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323292	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
28	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
29	IFR	25-BDV-013	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
30	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
31	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620050001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
32	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400501	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
33	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
34	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323305	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
35	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
36	IFR	25-BDV-016	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
37	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
38	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620060001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
39	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400601	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
40	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
41	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323295	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
42	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
43	IFR	25-BDV-019	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
44	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
45	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620070001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
46	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400701	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
00-JE-11001	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11002	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-11003	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-11004	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11005	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12001	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12002	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12003	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12004	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12005	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12006	PCS Digital Input JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13001	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13002	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-13003	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa		CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-21001	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87929	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-21002	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-22001	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87933	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-22002	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87934	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-23001	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-23002	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
25-BDV-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDV-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDV-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-BDY-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDY-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDY-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-FT-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FT-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-FT-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-FT-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FV-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FV-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FV-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FV-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FV-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FV-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FY-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407	II 2G	ATEX - SN 2400583	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FY-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407	II 2G	ATEX - SN 2400584	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FY-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407	II 2G	ATEX - SN 2400585	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FY-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407	II 2G	ATEX - SN 2400586	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FY-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407	II 2G	ATEX - SN 2400587	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FY-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407	II 2G	ATEX - SN 2400588	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-031	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

1 # EU - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

3 EU - Type Examination Certificate Number: **Baseefa10ATEX0026 – Issue 15**

4 Product: **Type 27 & 77 Solenoid Operator**

5 Manufacturer: **Bifold Fluidpower Limited**

6 Address: **Chadderton, Oldham, Greater Manchester, OL9 9XA, UK**

7 This re-issued certificate extends EU Type Examination Certificate No. **Baseefa10ATEX0026** to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 SGS Fimko Oy, Notified Body number 0598, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

8.1 The original certificate was issued by SGS Baseefa Ltd (UK Notified Body 1180). It, and any supplements previously issued by SGS Baseefa Ltd have been transferred to the supervision of SGS Fimko Oy (EU Notified Body 0598). The original certificate number is retained.

The examination and test results are recorded in confidential Report No. **See Certificate History**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-1:2014** **EN 60079-31:2014**

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

Ⓔx II 2GD **Ex db IIC T6 Gb (Tamb -60°C to +40°C)***
Ex tb IIIC T85°C Db (Tamb -60°C to +40°C)* IP66/67
***alternative Temperature class/Ambient combinations may also be marked, see schedule**

SGS Fimko Oy Customer Reference No. **1688** Project File No. **22/0377**

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web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Mikko Välimäki
Authorised Signatory for SGS Fimko Oy

13 **Schedule**

14 **Certificate Number Baseefa10ATEX0026 – Issue 15**

15 Description of Product

The Type 77 and Type 27 Solenoid Operators are rated at up to 240Vac or dc and have a maximum power dissipation of 14W. The Type 77 Solenoid Operator comprises a stainless steel cylindrical enclosure, whereas the Type 27 comprises an aluminium cylindrical enclosure, both have a spigot cover fitted with a silicone rubber seal.

In addition to the above there is also a two winding alternative designated the 'Pulse-Pulse Solenoid operator' which has a maximum combined coil rating limited to 20.5W.

The base of the enclosure is fitted with an adaptor bush which incorporates venting holes to allow the unit to be fitted onto a valve assembly rated up to a maximum pneumatic pressure of 10 bar. For hydraulic valves and valves with pneumatic pressures greater than 10 bar the top of the valve is provided with additional venting holes.

Internally the unit is fitted with a coil holder, coil and armature onto which is mounted an adjusting rod which forms a cylindrical joint with the adaptor bush and operates the valve when the solenoid is activated.

The cover may be fitted with a pushbutton or a rotary operator which can be used to operate the valve manually either momentarily or permanently.

The cover is secured using four stainless steel socket head cap screws grade of grade A4-70.

The equipment is marked:

Ex db IIC T6 Gb (Tamb -60°C to +40°C)*

Ex tb IIIC T85°C Db (Tamb -60°C to +40°C)* IP66/67

*The following alternative Temperature class/Ambient combinations may also be marked

T5/T100°C (Tamb -60°C to +55°C)

T4/T135°C (Tamb -60°C to +90°C)

An M20 or ½" NPT cable entry hole is provided as specified on the certified drawings for the accommodation of suitable IECEx Equipment (not a Component) certified cable entry device, with or without the interposition of a suitable IECEx Equipment certified (not a Component) flameproof thread adapter.

An M20 cable entry is provided unless the marking 'K85' appears in the Model No. marked on the label, in which case a ½" NPT cable entry hole is provided.

16 Report Number

See Certificate History

17 Specific Conditions of Use

None

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product:

Clause	Subject
1.4.1	External effects
1.4.2	Aggressive substances etc.

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Issue	Date	Description
0-SL0070	0	2022.06.30	TYPE 27 & 77 SOLENOID LABEL - ROTORK BRAND - L240

Current drawings which remain unaffected by this issue:

Number	Issue	Date	Description
0-SC0004	1	09.07.20	Solenoid Lid Options G.A
0-SC0006	0	17.04.09	Latched Energised and Tamperproof Solenoid Options
0-SC0008	1	29.03.11	Override Cover Assembly
0-SC0009	0	12.02.15	Serial Numbers IIB, Type 77
**0-GA0870	0	07.11.17	General Arrangement L209 Variant – Fixed Head Operator
0-SC0003	11	20.09.21	Type 27 and 77 Solenoid Operator
0-SC0007	5	24.11.21	Sol. Operator Pulse-Pulse.
0-SL0056	4	13.01.22	Type 27 & 77 Solenoid housing label Ex d
0-SL0058	5	2022.02.07	Type 27 & 77 Solenoid housing label Ex d
0-SL0068	0	2022.01.17	Label Type 27 and 77 Solenoid Operator

**This drawing is common to this certificate and BAS02ATEX2048, BAS21UKEX0642 and is held with IECEx BAS 10.0008.

20 Certificate History

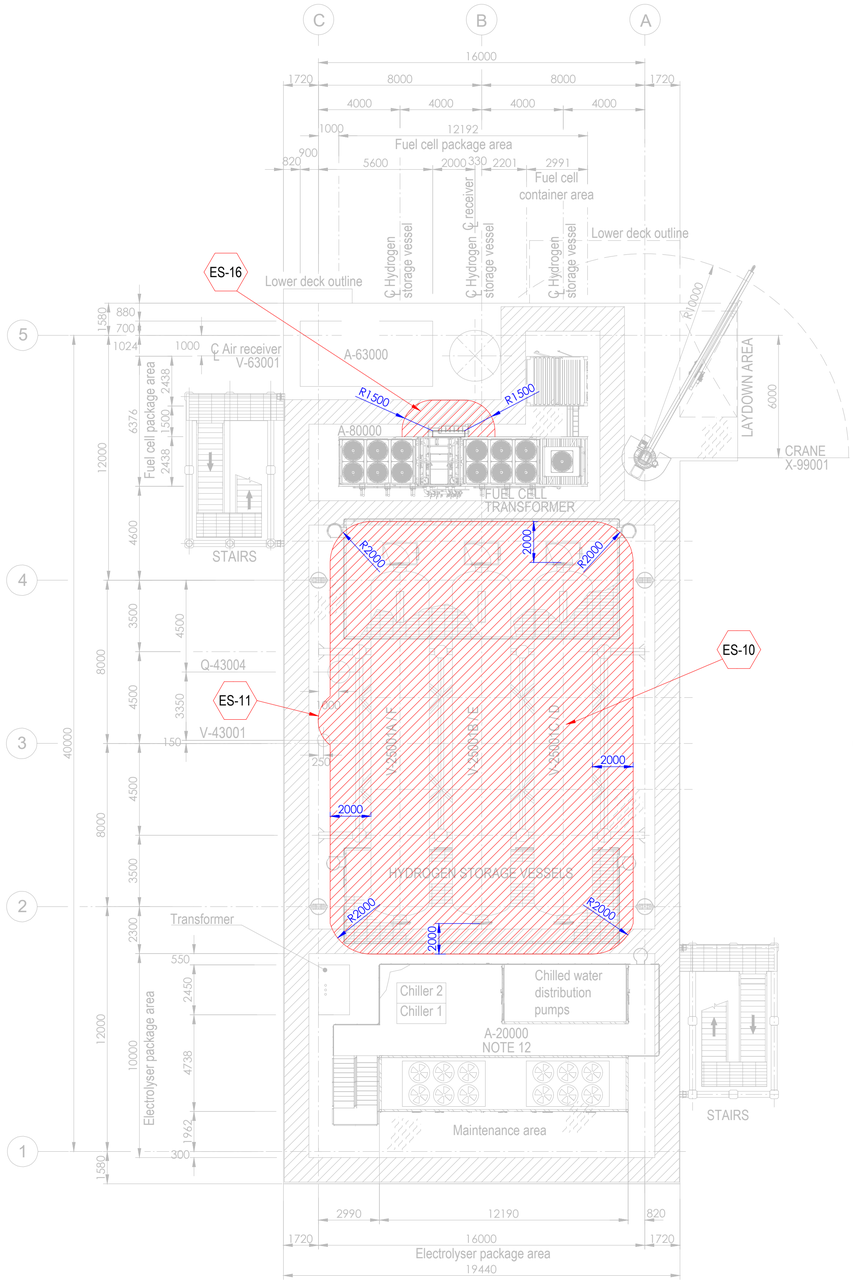
Certificate No.	Date	Comments
Baseefa10ATEX0026	20 April 2010	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0: 2006, EN 60079-1: 2007, EN 61241-0: 2004 and EN 61241-1: 2004 is documented in Test Report No. GB/BAS/ExTR10.0014/00.
Baseefa10ATEX0026/1	7 April 2011	Amendment to the diametral tolerance for the adjusting rod. Omission of drawing 0-SC0001 (previously submitted in error). Alternative design of pushbutton override cover assembly. Minor drawing variations. Documented in Test Report No. GB/BAS/ExTR11.0084/00
Baseefa10ATEX0026/2	8 July 2011	Alternative internal design to form the Pulse-Pulse Solenoid Operator. This unit has two windings with a combined rating of 20.5W. Amended designation for the solenoid housing material. Documented in Test Report No. GB/BAS/ExTR11.0123/00
Baseefa10ATEX0026/3	2 April 2012	Alternative label design incorporating the complete range of temperature class and ambient temperature markings provided for by this certificate. Documented in Test Report No. GB/BAS/ExTR12.0086/00

Certificate No.	Date	Comments
Baseefa10ATEX0026/4	2 December 2013	A re-designation of the Type FP Solenoid Operator, to the Type 77 Solenoid Operator. A satisfactory assessment against the requirements of the updated standards IEC 60079-0: 2011 and IEC 60079-31: 2008 (superseding IEC 61241), complete with a review of the marking. Introduction of an alternative aluminium housing and cover material. Documented in Test Report No. GB/BAS/ExTR13.0291/00
Baseefa10ATEX0026/5	29 July 2014	This issue permits existing information (for example on Schedule Drawings) to be replaced by the revised certificate holders address. No other changes may be made to the certified design. Documented in Test Report No. None.
Baseefa10ATEX0026/6	17 February 2015	Clarification of the Type name. The Type 77 comprises a stainless steel housing and the Type 27 comprises an aluminium housing. To allow the introduction of alternative seal materials. To allow the Type 77 Solenoid Operators having Serial numbers as defined in drawing number 0-SC0009 to be marked with Ex d IIB T6 Gb. Documented in Test Report No. GB/BAS/ExTR14.0317/00
Baseefa10ATEX0026/7	23 June 2016	Minor drawing changes not affecting certification. Documented in Test Report No. GB/BAS/ExTR16.0164/00
Baseefa10ATEX0026/8	16 March 2017	To allow the introduction of an alternative low power circuit. To allow for correction of the Type designation listed on the EU-Type Examination Certificate Baseefa10ATEX0026 To allow for correction of description to include the Pulse Pulse Unit. Documented in Test Report No. GB/BAS/ExTR17.0076/00
Baseefa10ATEX0026/9	20 July 2017	To allow the introduction of an alternative low power circuit. Documented in Test Report No. GB/BAS/ExTR17.0211/00
Baseefa10ATEX0026/10	3 January 2018	To introduce an alternative non-rotational mounting arrangement to attach the adaptor bushing via the coil holder to the enclosure housing. Identification of threaded entry holes on the enclosure wall. Documented in Test Report No. GB/BAS/ExTR17.0274/00
Baseefa10ATEX0026/11	7 March 2018	To introduce alternative terminal plate with a different grounding point design. To introduce optional certification marks in addition to the existing one to be included on to the certification label marking. Documented in Test Report No. GB/BAS/ExTR 18.0041/00
Baseefa10ATEX0026/12	12 July 2019	To assess the Type 27 and 77 Solenoid Operator against the standards EN IEC 60079-0:2018, EN 60079-1:2014 and EN 60079-31:2014 To permit minor drawing changes to the certification label that do not affect certification Documented in Test Report No. GB/BAS/ExTR19.0100/00

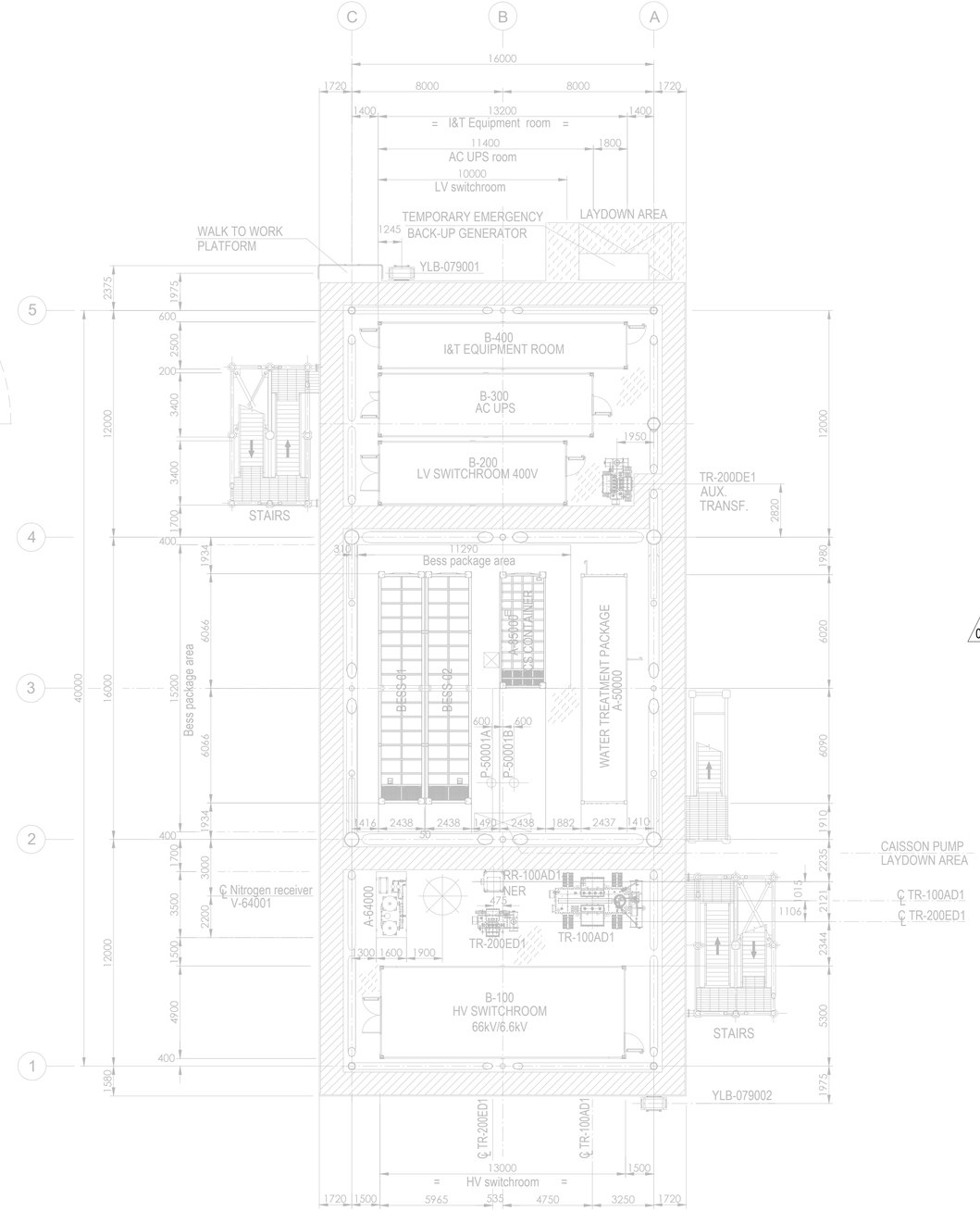
Certificate No.	Date	Comments
Baseefa10ATEX0026/13	14 July 2020	To introduce an alternative Detented Manual Over-Ride Lid (alternative spigoted cover), which allows the valve to be operated manually. Documented in Test Report No. GB/BAS/ExTR19.0341/00.
Baseefa10ATEX0026 – issue 14	11 February 2022	This issue of the certificate incorporates previously issued primary & supplementary certificates. To remove drawings 138-10, 138-10-K85, 0-S0252 and 0-S0254 transferring critical details to drawing 0-SC0003 revision 11. To remove drawing 0-SC0001. To add drawing 0-SL0068. To add an alternative encapsulant. To update the nameplate drawings to include UKEX details. Documented in Test Report No. GB/BAS/ExTR21.0158/00
Baseefa10ATEX0026 – issue 15	2 November 2022	This issue of the certificate incorporates previously issued primary & supplementary certificates. To add an alternative marking drawing with a different manufacturer branding. The assessment is documented in test report GB/BAS/ExTR22.0138/00
For drawings applicable to each issue, see original of that issue.		

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



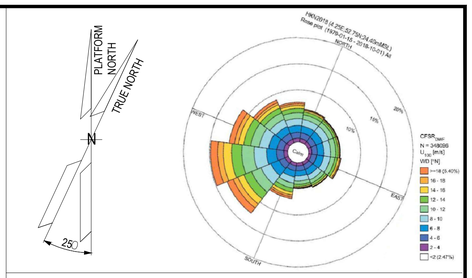
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

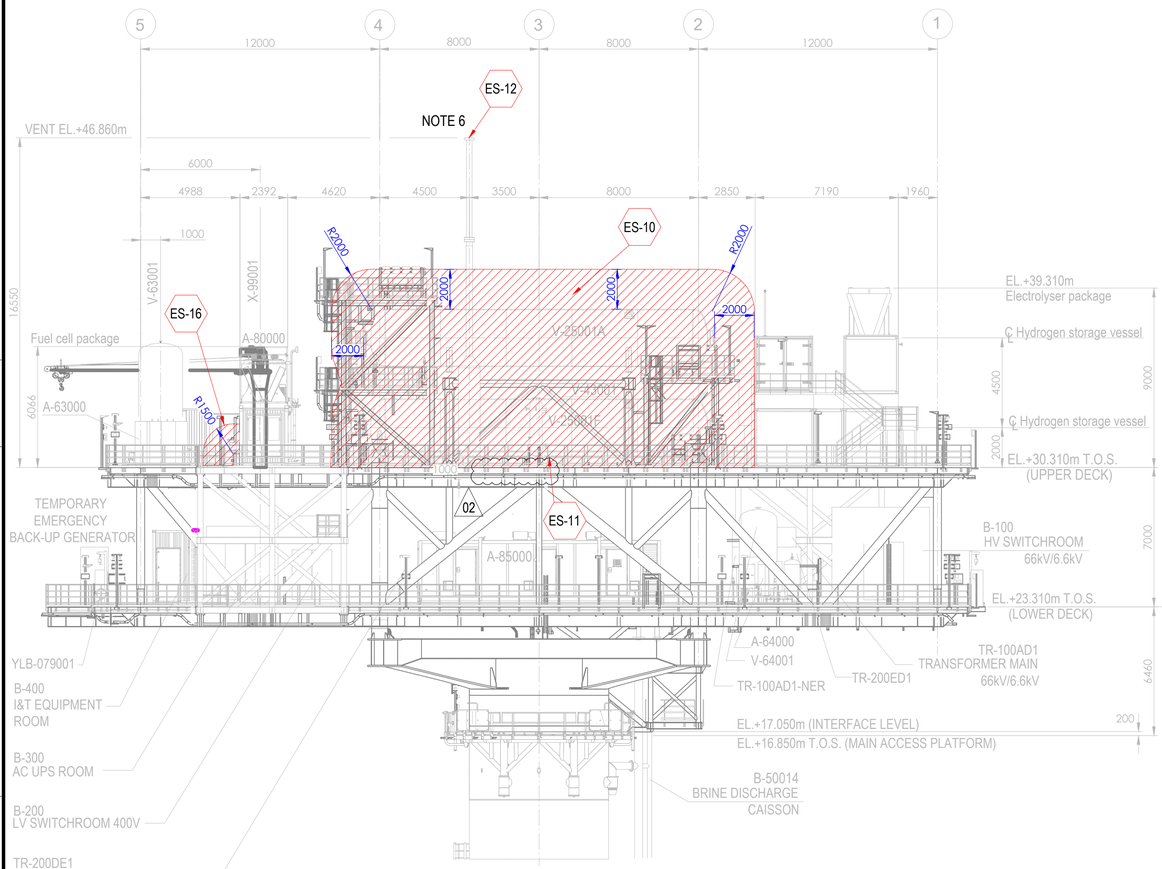
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

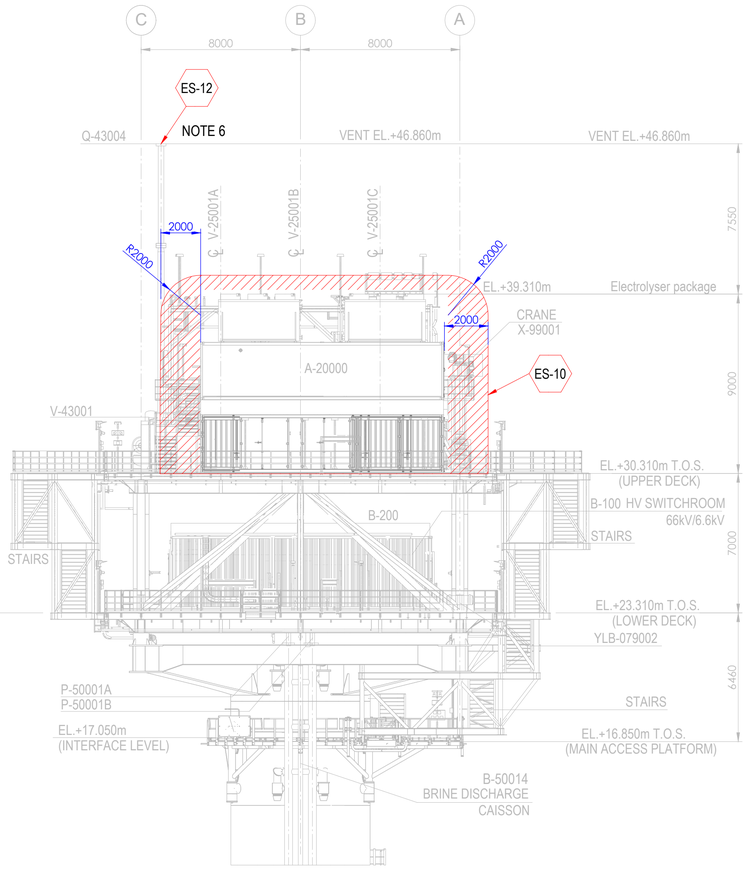
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

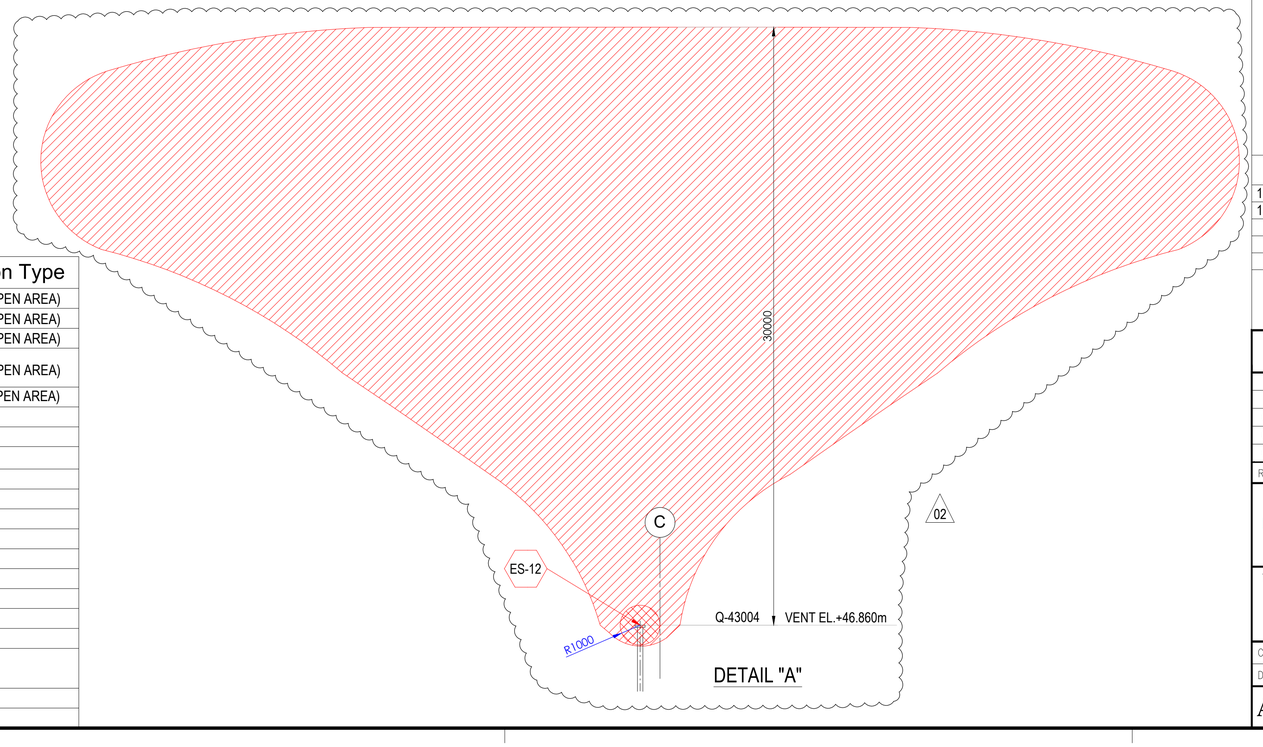


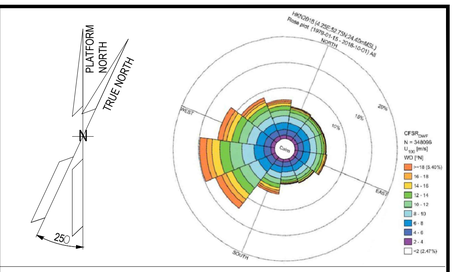
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-FV-038	: Control Valve - Nitrogen to V-25001E Vessel	Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001579	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		2400588			
Manufacturer	AST SpA			**Model**		CV-8407			
Cert No.	AST SpA DoC			**Equipment Ambient Temp.**		-8.5°C +100°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	NA

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		OK	
	Physical check	x	OK	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-FV-038	: Control Valve - Nitrogen to V-25001E Vessel			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001579		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-FV-038	: Control Valve - Nitrogen to V-25001E Vessel			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001579		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01
							Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

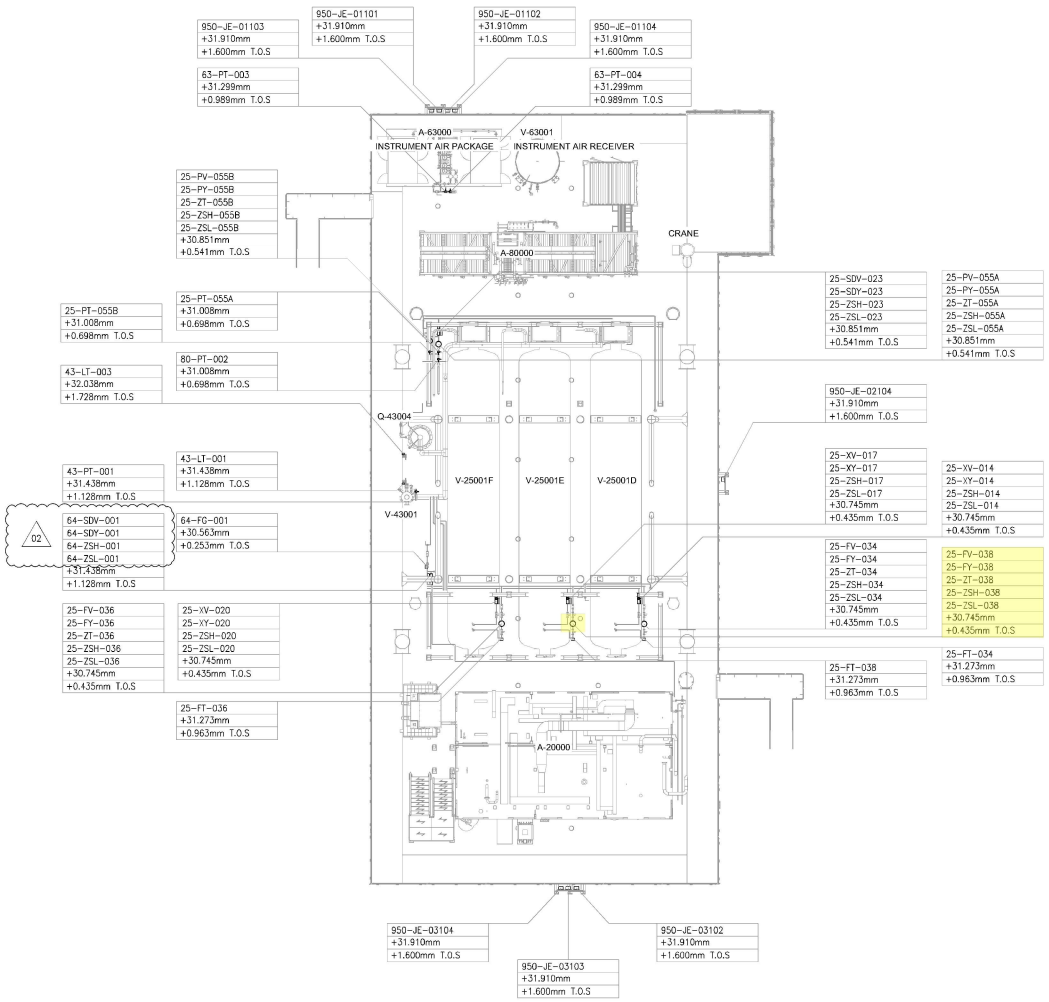
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-01-25	2025-01-28	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-25T13:51:28.082Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-28T15:33:03.500Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

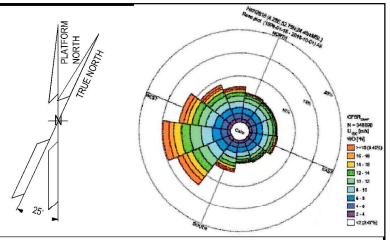
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

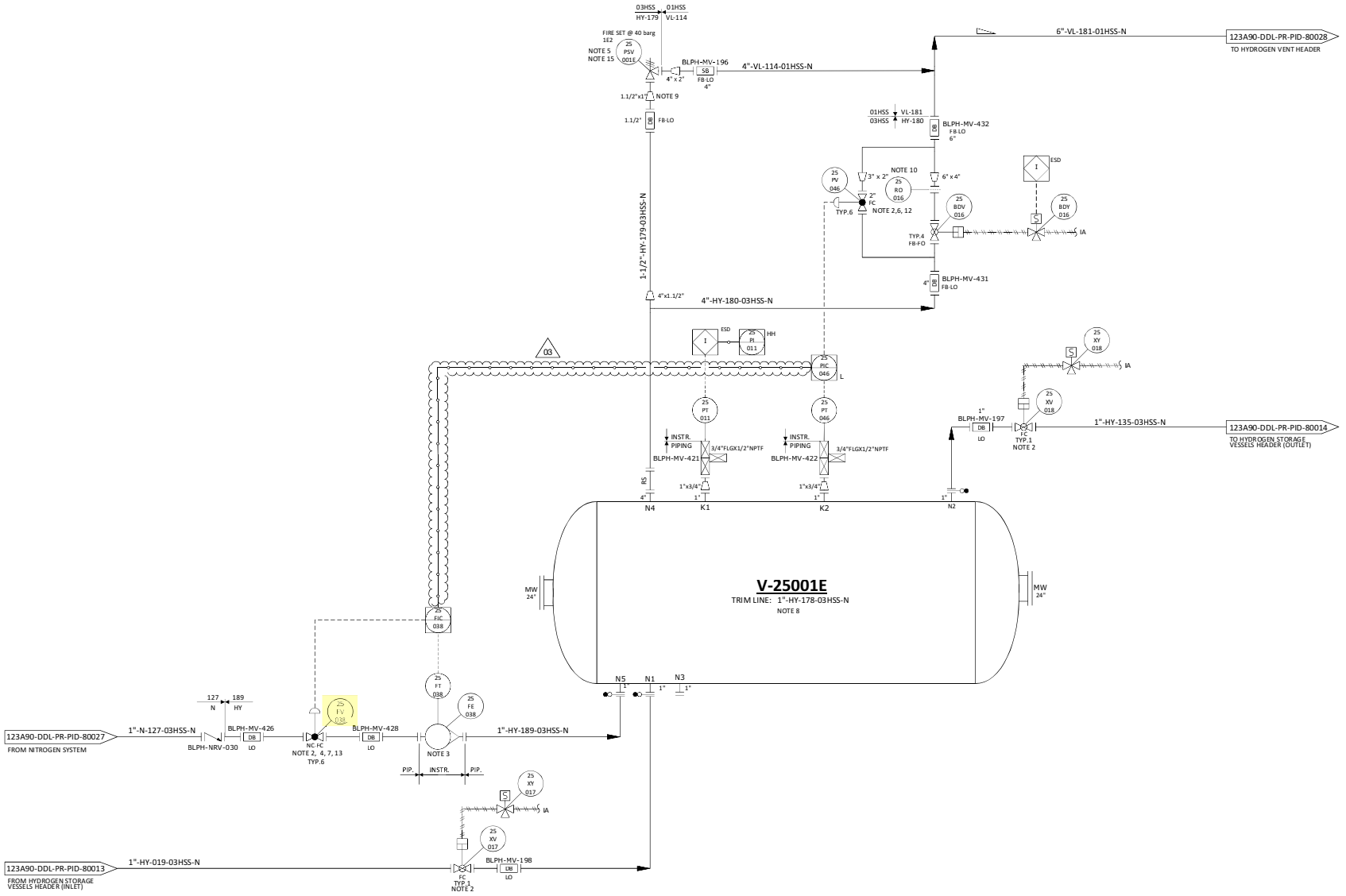
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

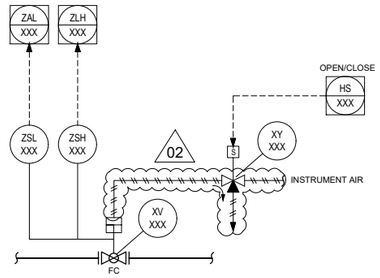
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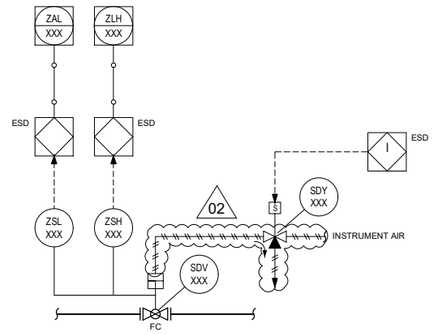
REV. 00

TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

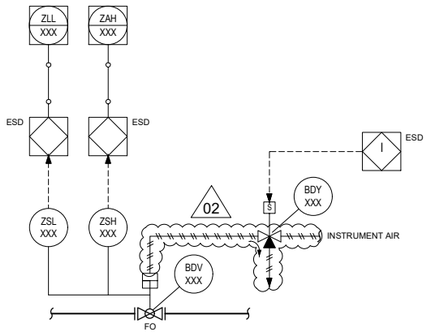


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



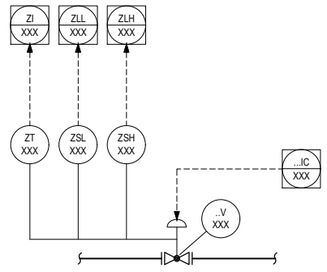
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)



02

TYP.6 (CONTROL VALVES - CRITICAL)



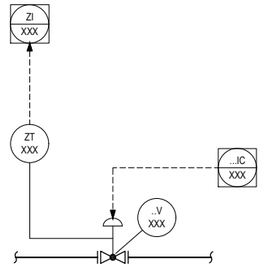
INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

TYP.7 (CONTROL VALVES - NOT CRITICAL)



NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1 DELETED 02

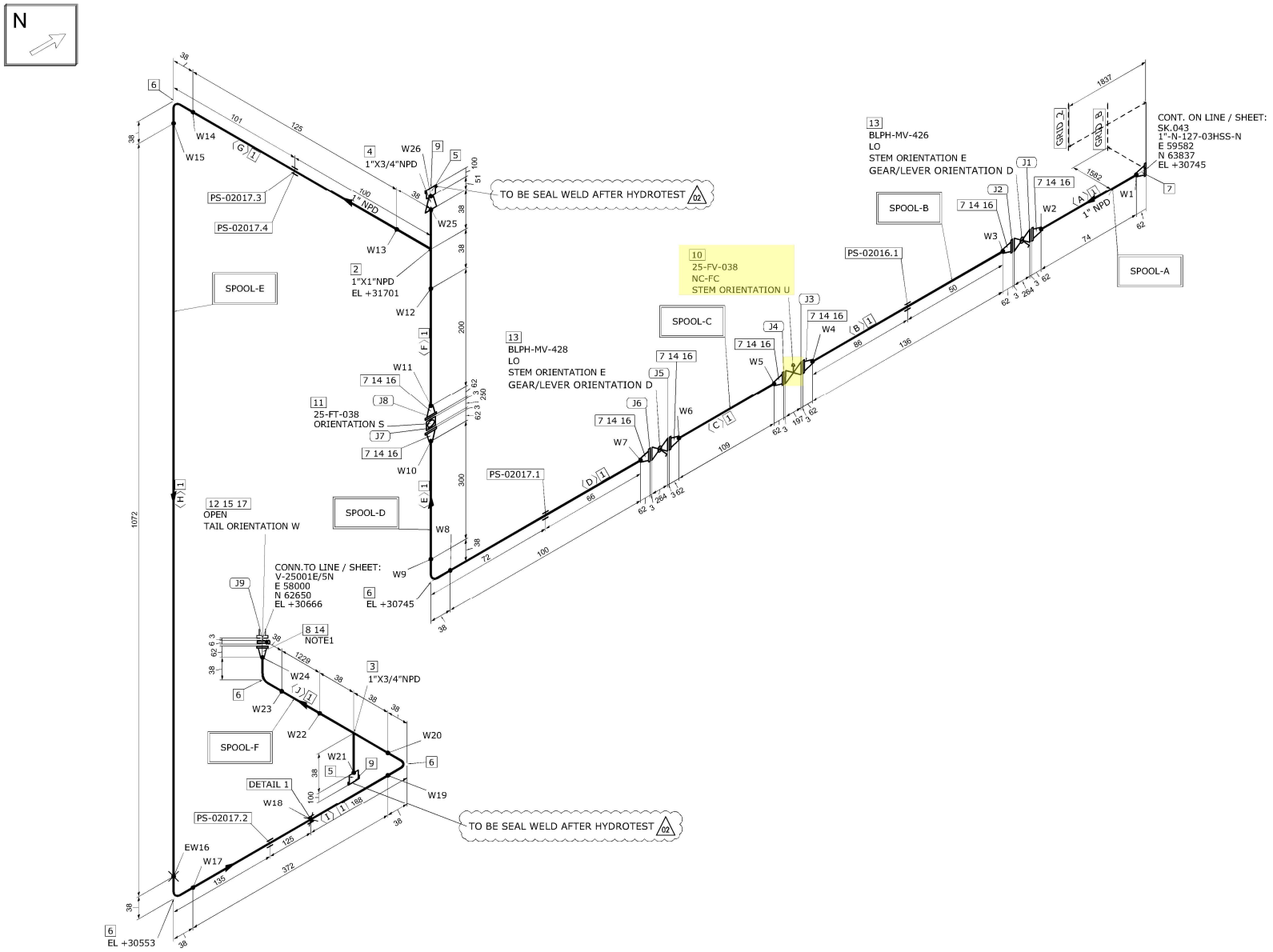
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01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND | ROSETTI MARINO

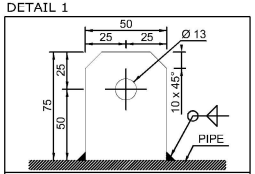
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80042	SHEET 001	REV. 02

File Name :



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.7M	9.4
2	1X1	TEE0SS00550100	Tee ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
4	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
5	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	2	0.3
6	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
7	1	FLW0ES03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	9	16.5
8	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
9	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	2	0.4
10	1		Control Valve - FLG 300 #RF	1	40.0
11	1		Flow Transmitter - ANSI - FLG 300#	1	12.0
12	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
13	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03CD1RFH	2	27.0
14	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	9	0.6
15	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
16	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	32	7.4
17	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	29.4
ERECTION WEIGHT [kg]	89.0
OVERALL WEIGHT [kg]	118.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW
EW16	1	BW
W17	1	BW
W18		FW
W19	1	BW
W20	1	BW
W21	3/4	BW
W22	1	BW
W23	1	BW
W24	1	BW
W25	1	BW
W26	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	74	BEVEL	BEVEL
B	1	136	BEVEL	BEVEL
C	1	109	BEVEL	BEVEL
D	1	100	BEVEL	BEVEL
E	1	300	BEVEL	BEVEL
F	1	200	BEVEL	BEVEL
G	1	125	BEVEL	BEVEL
H	1	1072	BEVEL	BEVEL
I	1	372	BEVEL	BEVEL
J	1	1229	BEVEL	BEVEL

SUPPORT LIST

PS-02016.1
PS-02017.1
PS-02017.3
PS-02017.4
PS-02017.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	3.8
B	2	4.0
C	2	3.9
D	4	4.8
E	6.75	6.1
F	6.75	6.8
MONT	1	89.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-189-03HSS-N

SK.093

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00093 | SHEET / OF: 1/1 | REV.: 02

LINE DATA

NDT INSPECTION CATEGORY	1	PED CATEGORY	II		
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg] TEMP. -29 / 80 [°C]	
HEAT TRACING	--		TEST	PRESS. 60 [barg] TEMP. AMB MEDIUM Water	

REFERENCE DOCUMENTS

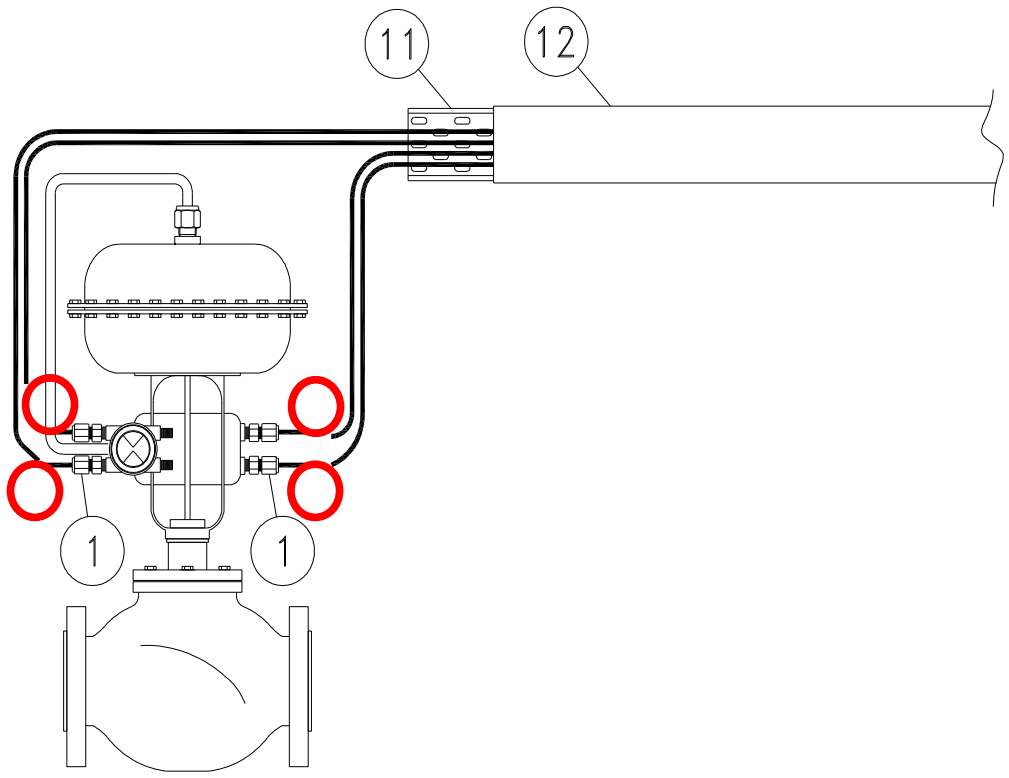
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

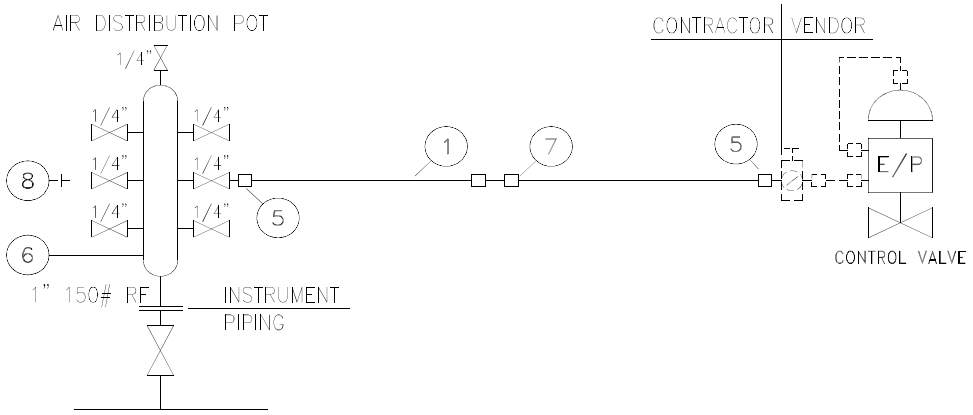
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PNEUMATIC HOOK-UP FOR CONTROL VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

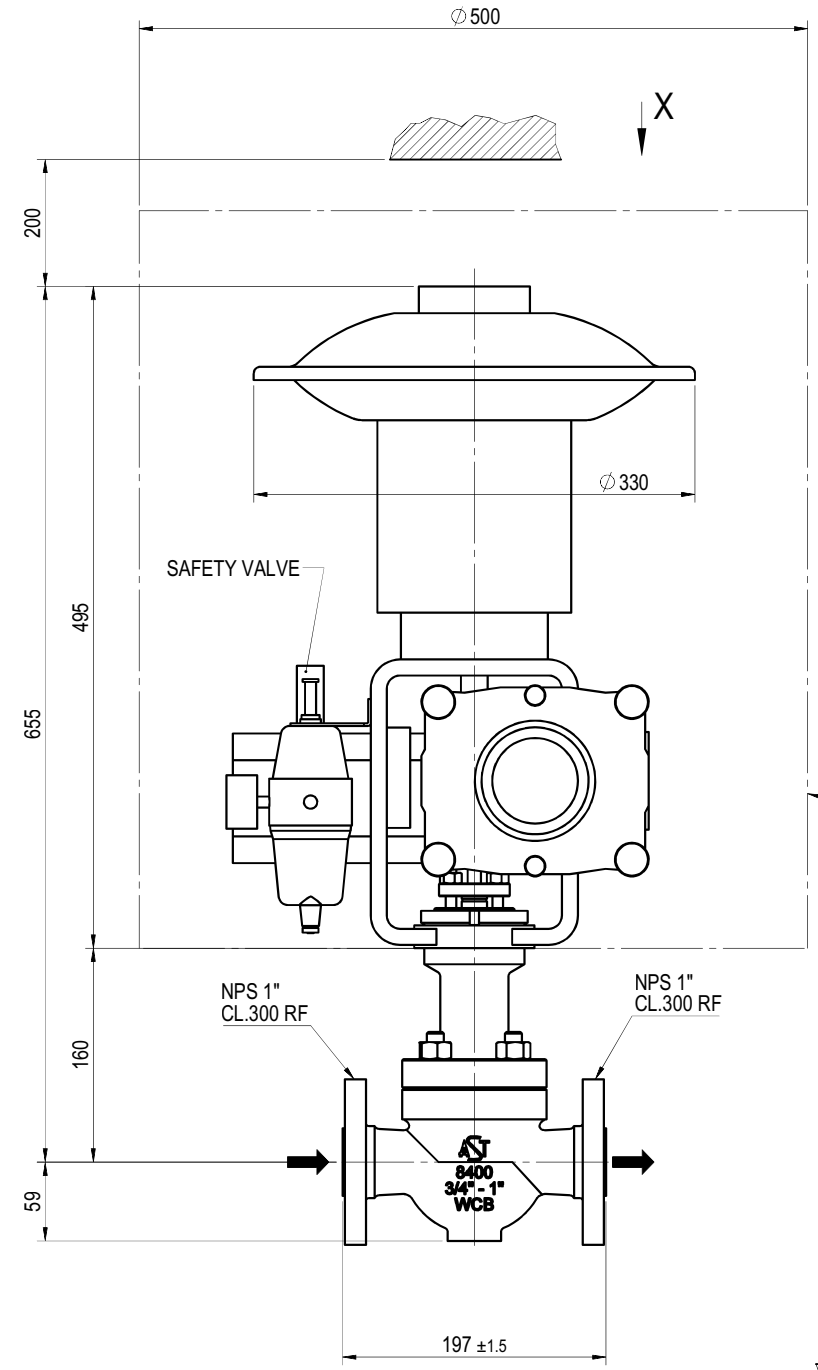


	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-038
6	25-FV-036
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
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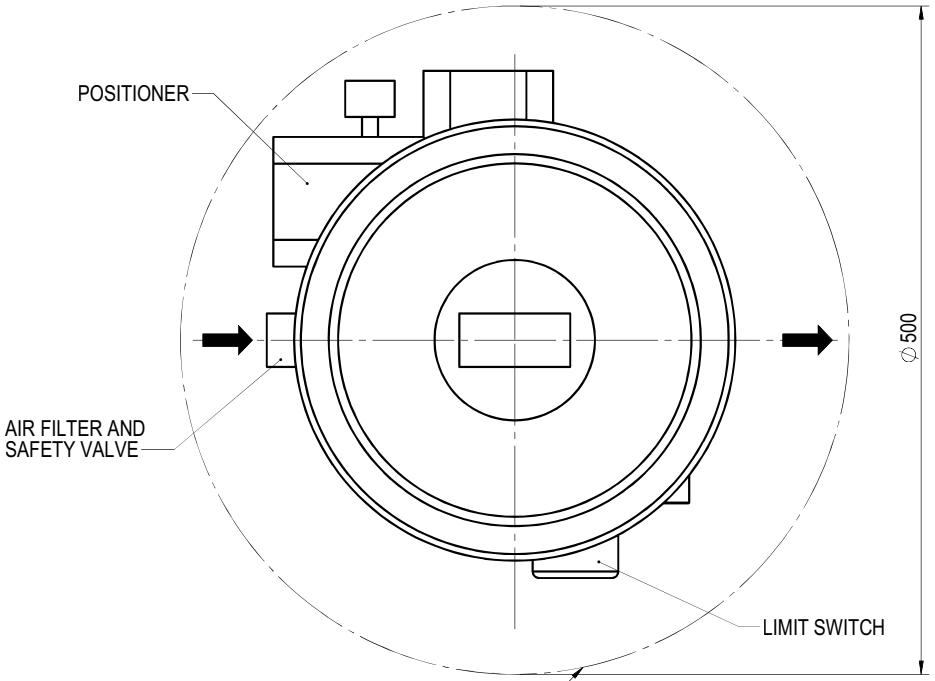
NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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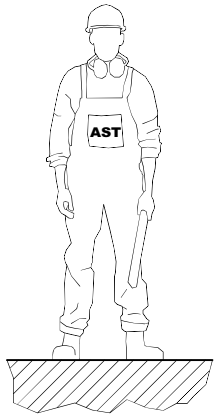
UPPER VIEW FROM "X"



MAXIMUM ACCESSORIES
OVERALL DIMENSION

POSITIONER ON BACK SIDE

MASS:
VALVE= ~ 12 kg
ACTUATOR= ~ 28 kg
TOTAL= ~ 40kg



General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-FV-031, 25-FV-032, 25-FV-033, 25-FV-034, 25-FV-036, 25-FV-038
Matricole / Serials	2400583, 2400584, 2400585, 2400586, 2400587, 2400588

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale

Mass kg

CR 00298

NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 1" PORT 1/4" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0100OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (MI) - Tel.02 934848.1 - Control valve division

GENERAL	1	Tag Number	P&ID Number			25-FV-038		123A90-DDL-PR-PID-80019	
	2	Service				NITROGEN FROM NITROGEN SYSTEM (U-64000) TO HYDROGEN STORAGE VESSEL (V-25001E)			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			1"-HY-189-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312 Gr.TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			NITROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 barg		100 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	17	Flow Rate (Gas)				Nm^3/h		40	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg		7	
	20	Pressure Drop				bar		max 7 - min 4	
	21	Inlet Temperature				°C		15	
	22	Inlet Density / Specific Gravity				kg/m^3		9.3	
	23	Inlet Compressibility Factor				-		0.99	
	24	Inlet Viscosity				cP		0.017	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-		1.4	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-		28	
CALCULATED RESULTS	28	Flow Coefficient Cv						0.3678 / 0.3846	
	29	Travel				75.6%			
	30	Sound Pressure Level				77.27 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HS03C02RFH)			
	33	Body Size	Trim Size			1"		1/4"	
	34	Rated Cv	Characteristics.			0.85		Equal% (11)	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 36L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				PTFE (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured (12, 13)			
	44	Rated Travel				13mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 1 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 14 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

ACTUATOR	50	MFR	Model	AST	SD11R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		15-30 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	(*)	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 15 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
00-JE-11001	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11002	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-11003	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-11004	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11005	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12001	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12002	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12003	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12004	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12005	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12006	PCS Digital Input JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13001	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13002	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-13003	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa		CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-21001	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87929	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-21002	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-22001	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87933	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-22002	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87934	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-23001	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-23002	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
25-BDV-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDV-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDV-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-BDY-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDY-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDY-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-FT-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FT-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-FT-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-FT-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FV-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FV-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FV-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FV-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FV-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FV-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FY-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407	II 2G	ATEX - SN 2400583	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FY-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407	II 2G	ATEX - SN 2400584	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FY-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407	II 2G	ATEX - SN 2400585	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FY-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407	II 2G	ATEX - SN 2400586	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FY-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407	II 2G	ATEX - SN 2400587	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FY-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407	II 2G	ATEX - SN 2400588	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-031	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

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Declaration of Conformity

Manufacturer:	**A.S.T. S.p.A.**
Pressure Equipment:	**CONTROL VALVE**
Job:	**CV2400221**
Type and Size:	**CV-8407 NPS 1" CLASS 300 RF Port ¼"**
Fluid:	**Group 1 – Group 2**
Temperature and Pressure:	**100°C - 40 Bar g**
Qty:	**1**
Serial Number:	**2400588**

A.S.T. S.p.A. declare that the above-mentioned product has been designed and manufactured according to Customer's specifications, European Pressure Equipment Directive as follows:

PED 2014/68/UE			
FLUID	**Group no.**	**1**	**Notified body # 1370** **Bureau Veritas Italia S.p.A.** **Viale Monza 347 - 20126 Milano - Italy**
☒	**Cat. I, II, III**	**Module H**	
☐	**Cat. IV**	**Module B+D**	
☐	**Art. 4.3**		

and to ATEX Directive as follows:

ATEX 2014/34/EU	
☒ **II 2 G Ex h IIC T6…T1 Gb X**	**Technical file # TEC079 filed at Notified body # 1370** **Bureau Veritas Italia S.p.A.** **Viale Monza 347 - 20126 Milano - Italy**

The following Codes and Standards are applied, when needed
ASME B1.1, ASME B1.20.1, ASME PTC-25, ASME CA-1, ASME B16.34, ASME B16.5, ASME B16.10, ASME B16.20, ASME B16.21, ASME B16.25, ASME B16.11, ASME Sect. I, ASME Sect. II parts A-B-D, ASME Sect. V, ASME Sect. VIII, ASME BPV code cases, ASME Sect. IX, NB-23, API 6A, API 520, API 521, API 527, API 576, API 598, EN 19, EN 764-7, EN ISO 4126 parts 1-4-7-9-10, EN 1092, EN 1759, EN 12516 part 1 e 2, EN 12627, EN 12760, EN 12952-10, EN 12953-8, EN 13648-1, EN 10204, EN 12266-1, ISO 5208, ISO 15156 parts 1-2-3, ISO 9001, ISO 80079-36, ISO 80079-37, IEC 60079-0 MSS SP-55.

Construction materials used according to ASTM standard and subjected to Particular Material Appraisal. Alternatively, materials according to European harmonized standards are used.

Delegate for signature

Name: Luca Pressato
Title: Quality Assurance Manager
Date: 06/11/2024

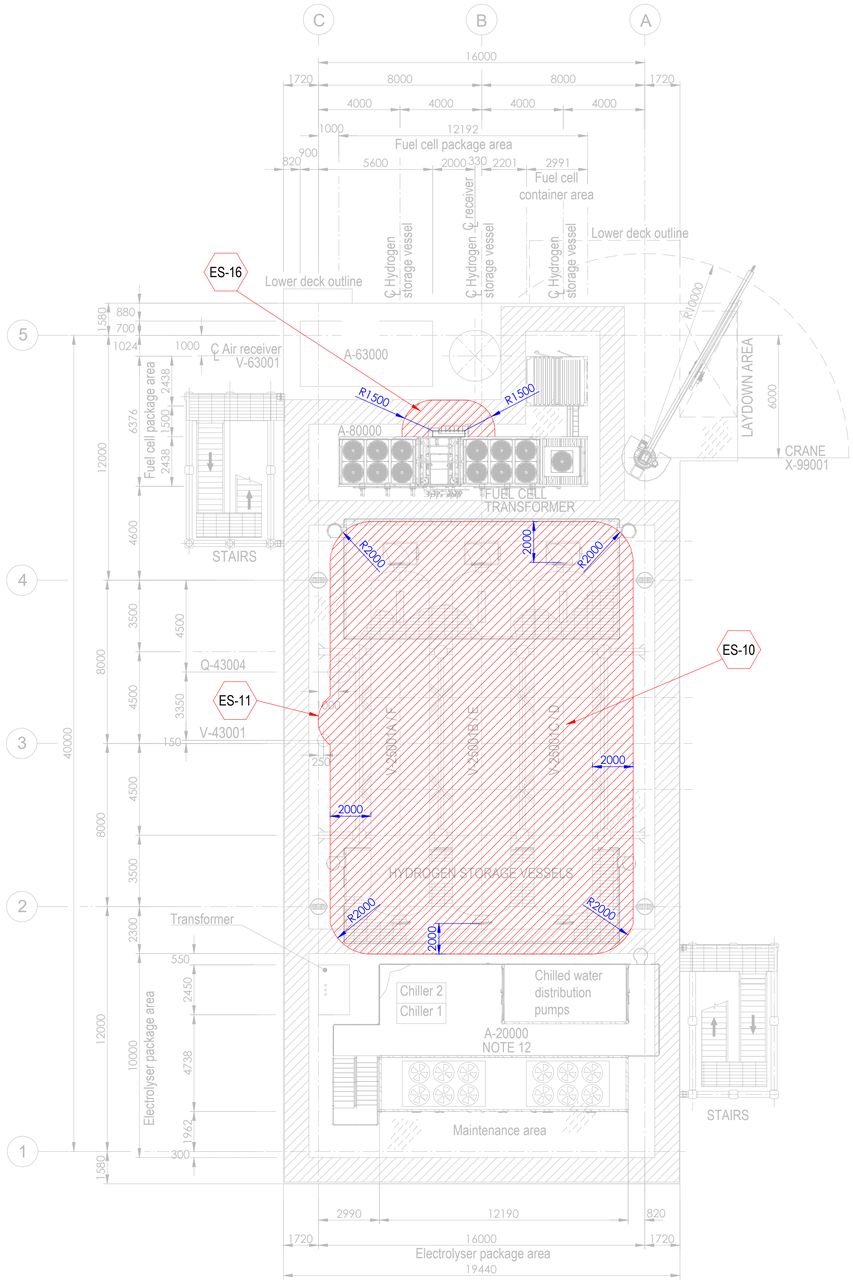
Signature:

A.S.T. S.p.A.
Quality Assurance

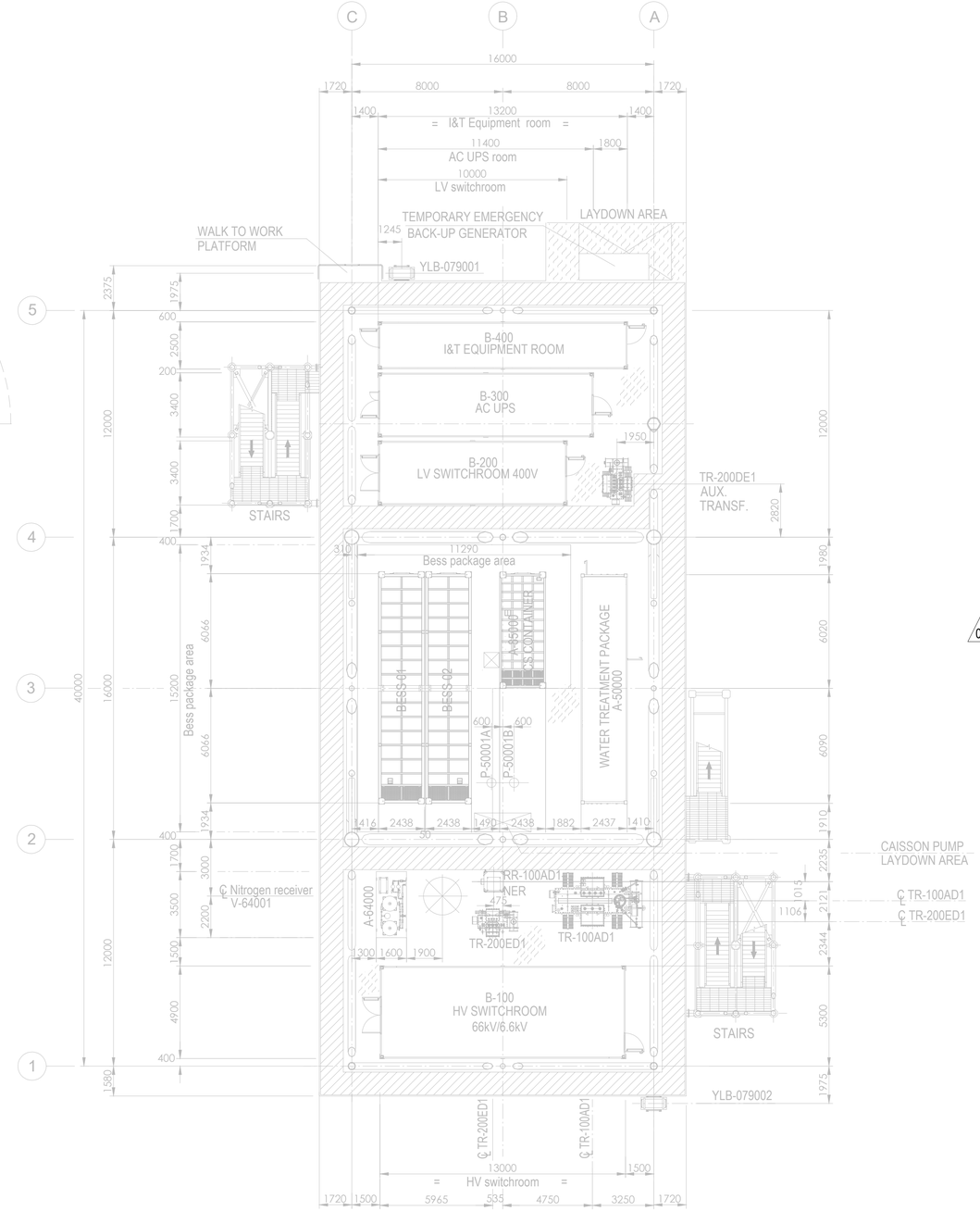
Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - II 2G Ex db IIC T5 / T6	Tiissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure G

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



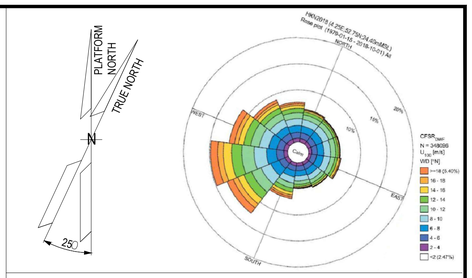
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

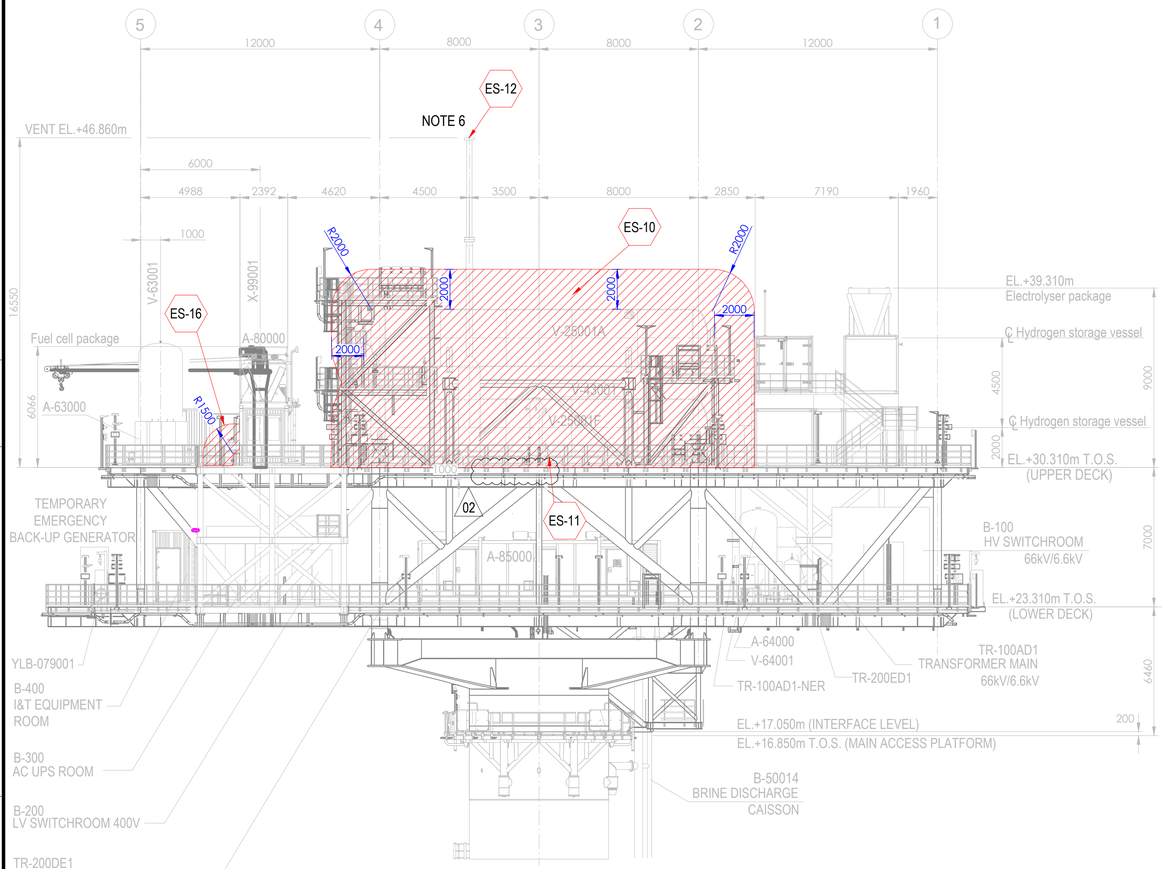
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

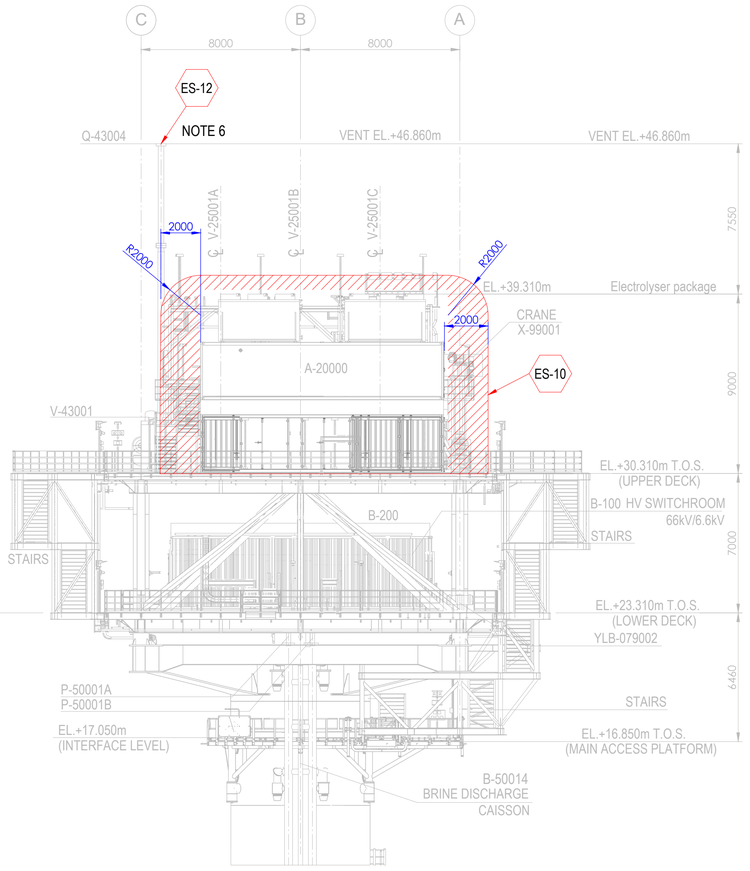
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

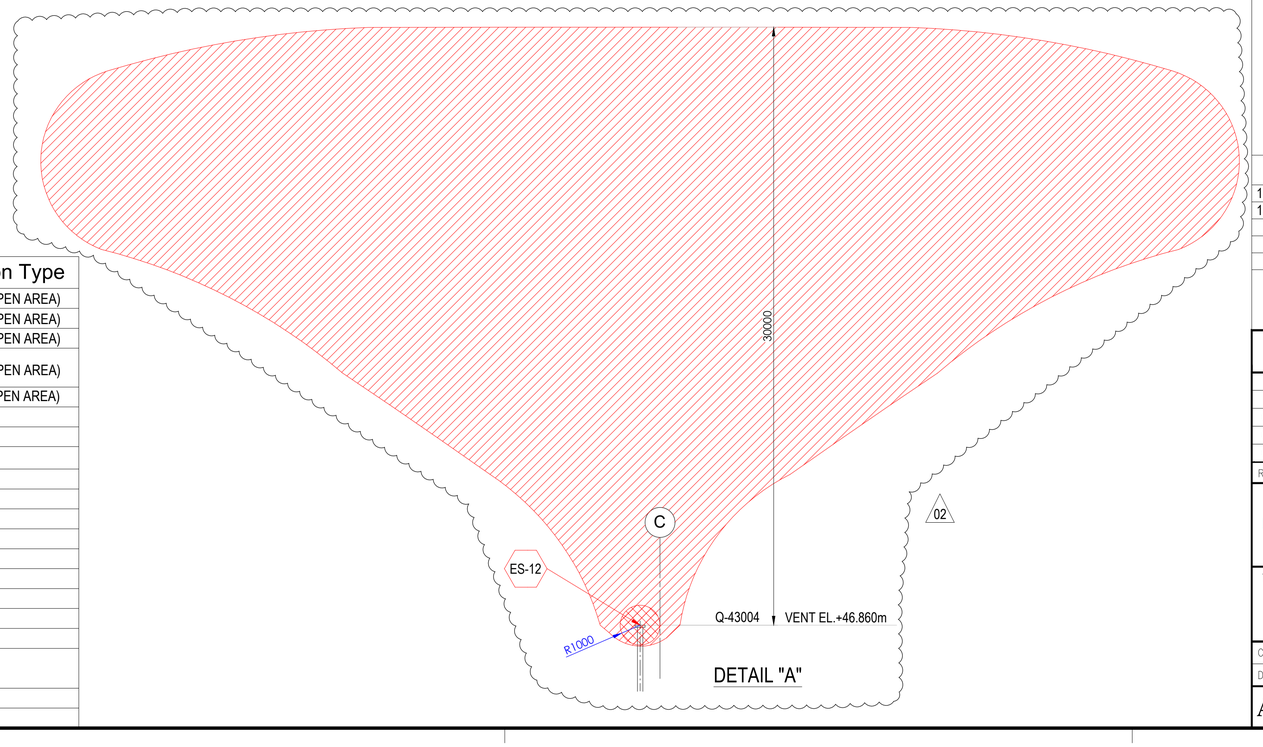


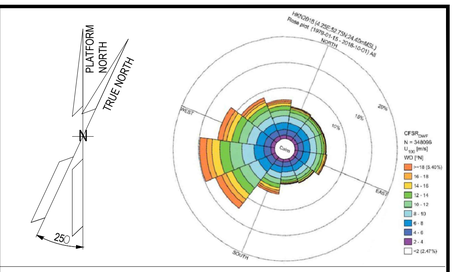
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PV-046	: Control Valve - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001584	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	2400593				
Manufacturer	AST			**Model**	CV-8407				
Cert No.	Declaration of Conformity by Manufacturer			**Equipment Ambient Temp.**	-8.5 °C to +100 °C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	NA

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PV-046	: Control Valve - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001584		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PV-046	: Control Valve - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001584		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

	Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA		
68	Hermetically sealed and enclosed break devices are undamaged	x	NA		
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA		
70	Test port, if fitted, is functional (type “nR” only)	x	NA		
71	Breathing operation is satisfactory (type “nR” only)	x	NA		
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA		
73	The ventilation airflow is not impeded	x	NA		
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA		
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA		
76	Variable voltage/frequency installation complies with documentation	x	NA		
	Extra Ex p checks				
77	Pressurization gas is correct type	x	NA		
78	Actual pressure is within maximum and minimum settings for equipment	x	NA		
79	Timers set as per certification documentation	x	NA		
80	Alarms and trip functions operate correctly as per certification documentation	x	NA		
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA		
82	Automatic electrical protective devices operate within permitted limits	x	NA		
83	Automatic electrical protective devices are set correctly	x	NA		
84	Protective gas inlet temperature is below maximum specified	x	NA		
85	Ducts, pipes and enclosures are in good condition	x	NA		
86	Protective gas is substantially free from contaminants	x	NA		
87	Protective gas pressure and/or flow is adequate	x	NA		
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA		
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA		
90	Specific conditions of use (if applicable) are complied with		NA		
	Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA		
92	Cables are installed in accordance with the documentation	x	NA		
93	Segregation is maintained between IS and non-IS Circuits	x	NA		
94	Cable screens are isolated at one end (field side)	x	NA		
95	Cable screens are earthed in accordance with the documentation	x	NA		
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA		
97	Equipment installed is the one specified in the documentation	x	NA		
98	Ambient temperature range of the apparatus is correct for the installation	x	NA		
99	Service temperature range of the apparatus is correct for the installation	x	NA		
100	Installation is clearly labelled	x	NA		
101	Printed circuit boards are clean and undamaged	x	NA		
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA		
103	Point-to-point connections are all correct	x	NA		
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA		
105	Earth connections maintain the integrity of the type of protection	x	NA		
106	Intrinsically safe circuit earthing is satisfactory	x	NA		
107	Insulation resistance is satisfactory	x	NA		
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA		

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

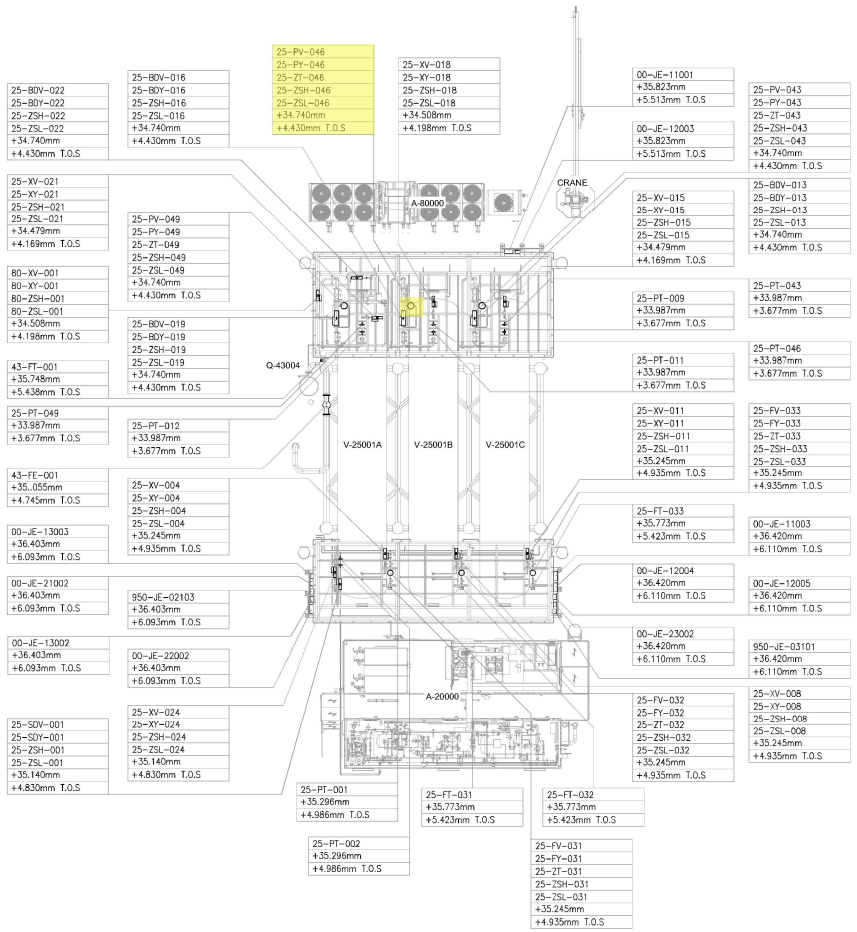
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-13	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-13T12:29:52.974Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-18T15:39:06.631Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

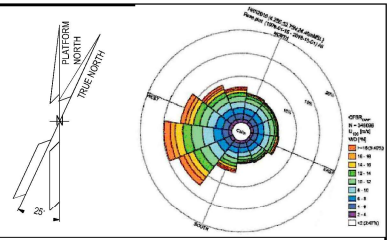
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

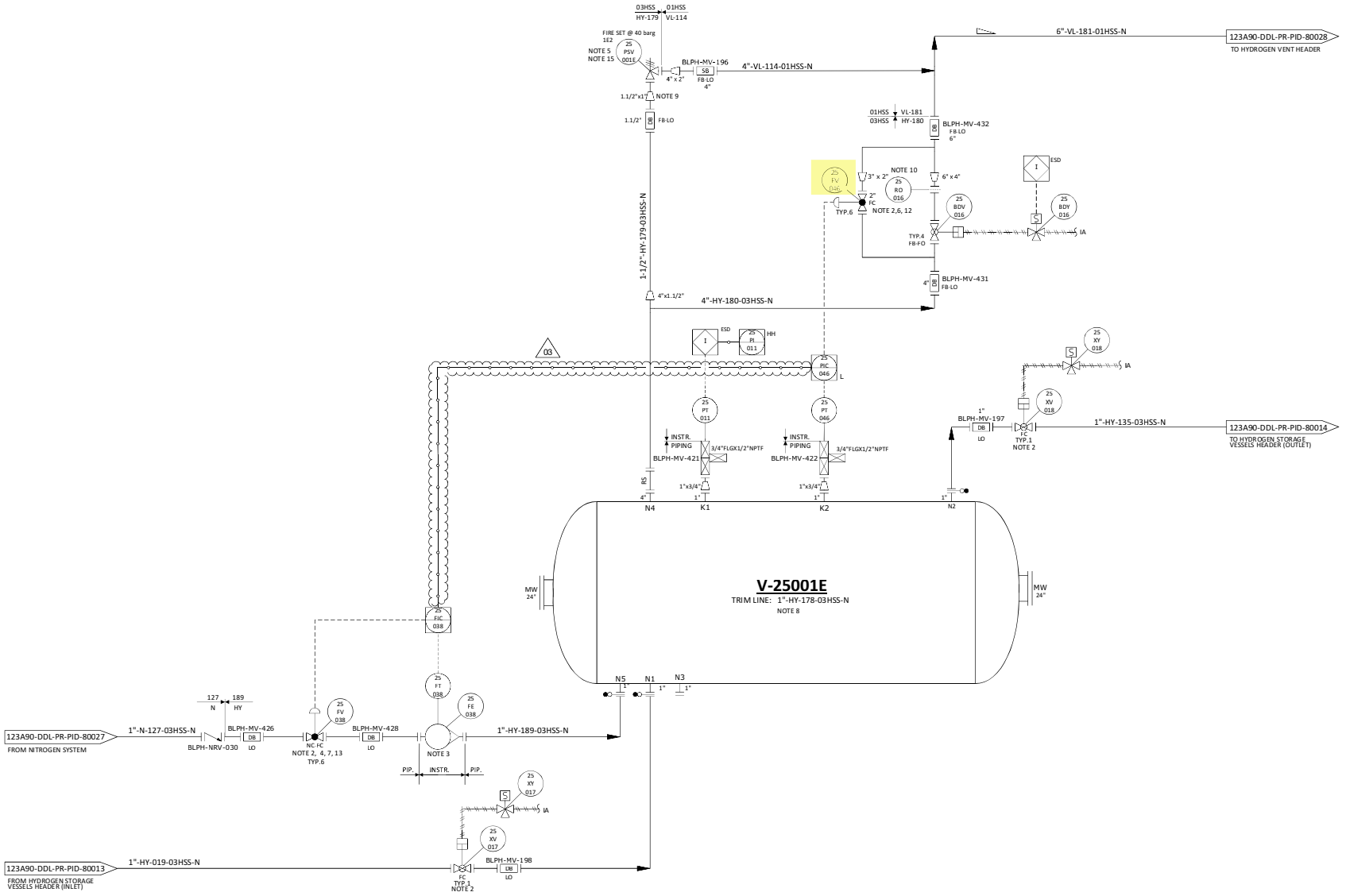
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

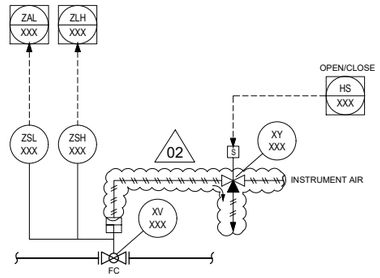
File Name : FILE_NAME

DRAWING NO.

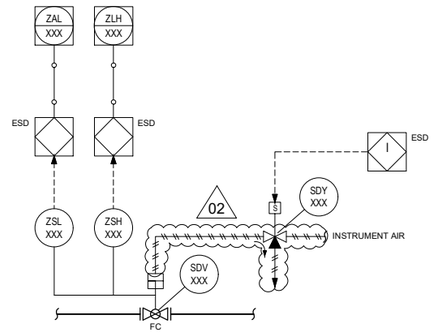
REV. 00

TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

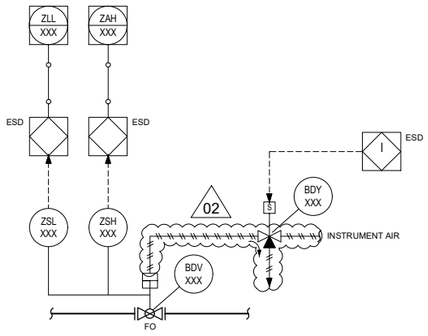


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



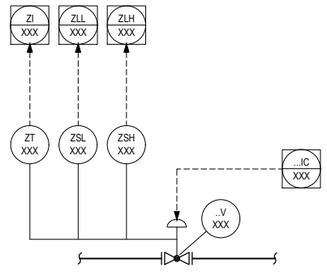
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)



02

TYP.6 (CONTROL VALVES - CRITICAL)



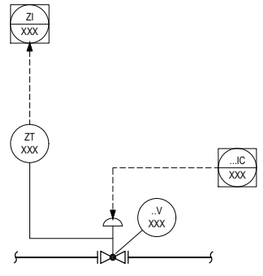
INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

TYP.7 (CONTROL VALVES - NOT CRITICAL)



NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1 DELETED 02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND | ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80042	SHEET 001	REV. 02

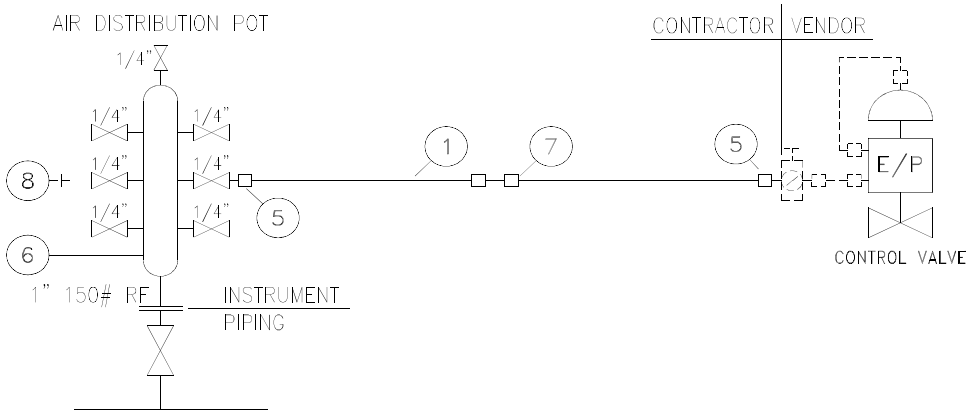
File Name :

PNEUMATIC HOOK-UP FOR CONTROL VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA



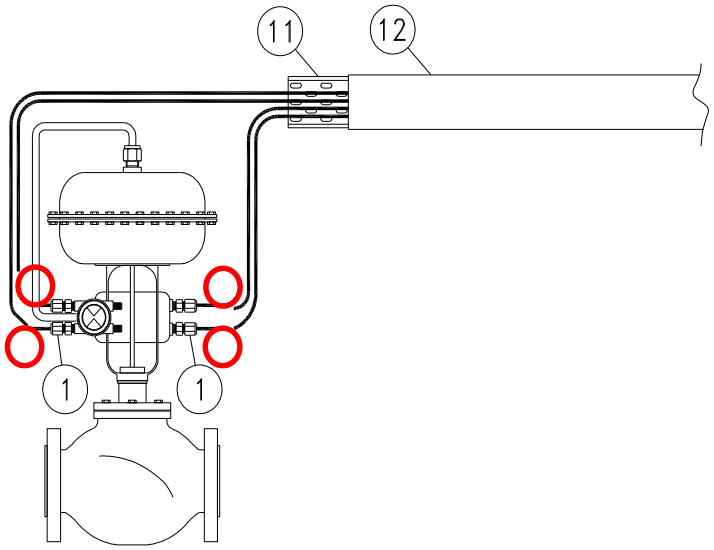
	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-038
6	25-FV-036
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
18	
19	
20	
21	
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23	
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29	
30	

NOTE:

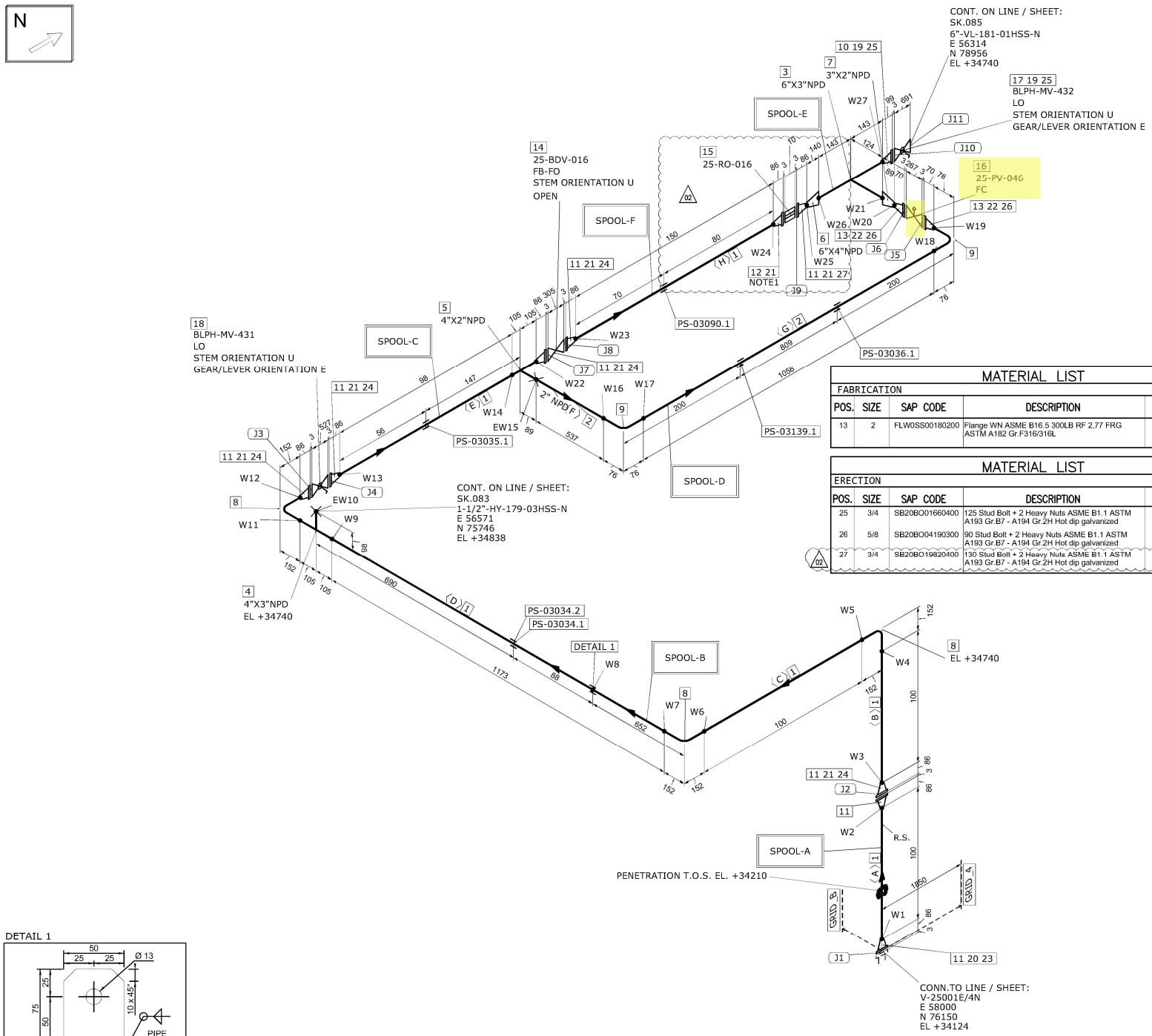
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

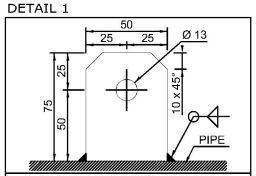
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	800.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

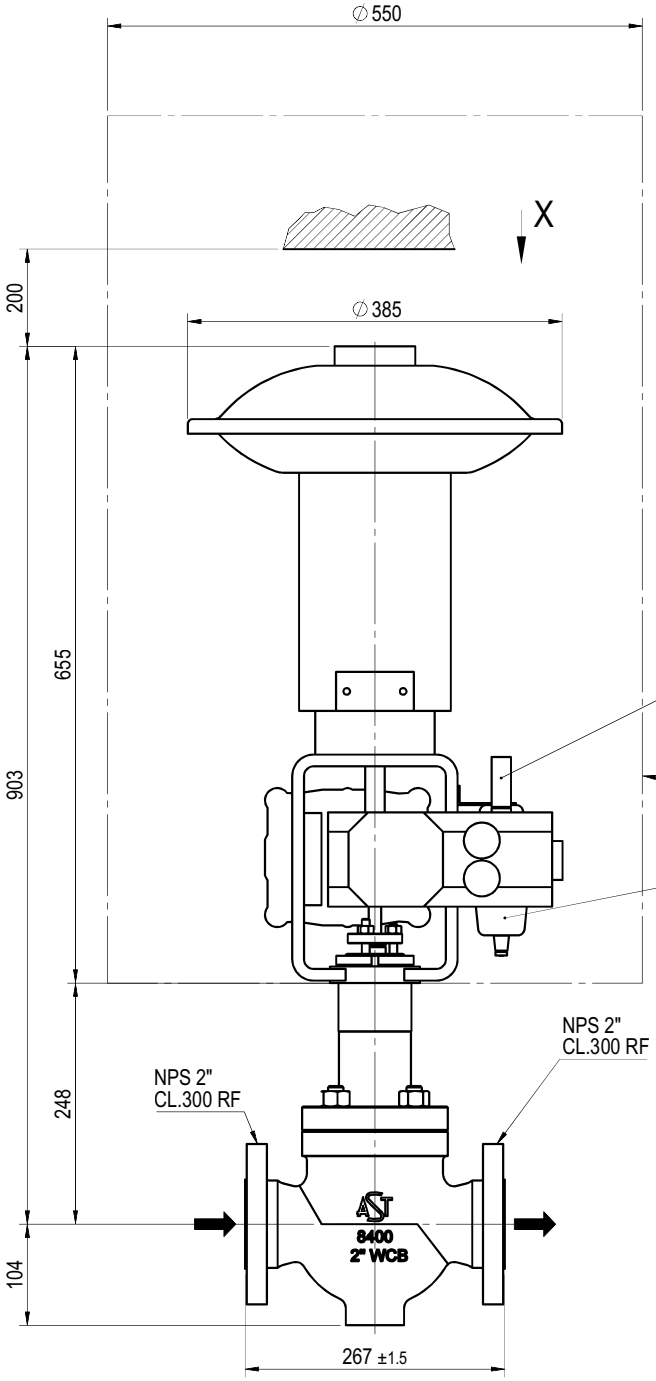
LINE DATA							
NOT INSPECTION CATEGORY	1	PED CATEGORY	III				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

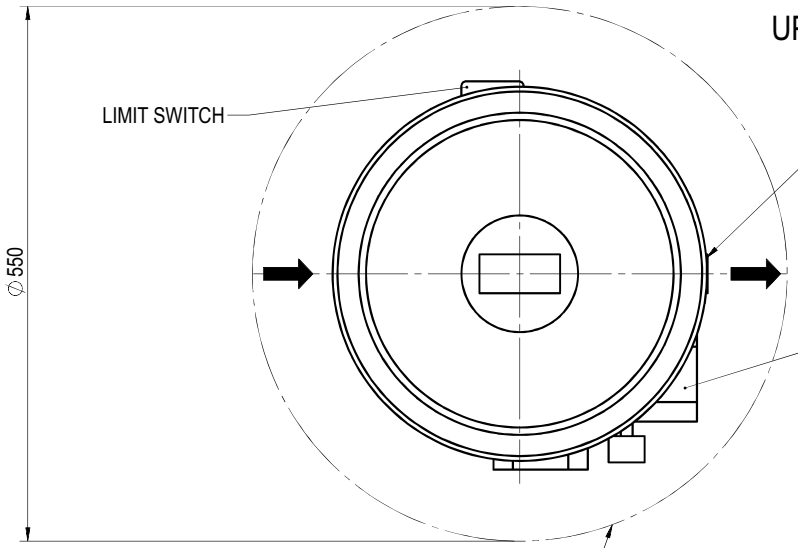
REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

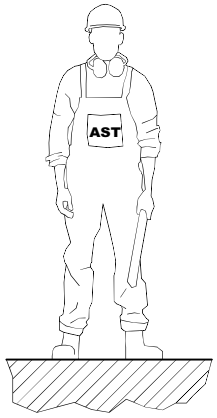
NOTES
1.JACKSCREWS POSITION E\W

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT
APPROVED	LM	DATE	17-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00084
SHEET / OF	1/1	REV.	02







POSITIONER ON FRONT SIDE

MASS:
VALVE= ~ 30 kg
ACTUATOR= ~ 45 kg
TOTAL= ~ 75 kg

General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-PV-035, 25-PV-037, 25-PV-040, 25-PV-043, 25-PV-046, 25-PV-049
Matricole / Serials	2400589, 2400590, 2400591, 2400592, 2400593, 2400594

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale | Mass kg | CR 00299 | NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 2" PORT 1" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0200OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (Mi) - Tel.02 934848.1 - Control valve division

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PSV-055B	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03803	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PT-001	Hyrogen to vessels inlet header	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240634	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-002	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240635	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-004	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240636	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PT-006	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240638	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-PT-008	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240640	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-PT-009	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240642	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PT-011	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240644	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_2
25-PT-012	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240646	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-035	Vessel V-25001A pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240637	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PT-037	Vessel V-25001B pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240639	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-PT-040	Vessel V-25001C pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240641	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-PT-043	Vessel V-25001D pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240643	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PT-046	Vessel V-25001E pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240645	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_2
25-PT-049	Vessel V-25001F pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240647	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240648	SST76-H-7-K-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PT-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240649	SST76-H-7-K-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PV-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400589	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PV-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400590	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PV-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400591	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PV-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400592	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PV-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400593	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PV-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400594	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PV-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400595	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PV-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400596	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PY-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400589	CV-8407	II 2G	ATEX - SN 2400589	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PY-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400590	CV-8407	II 2G	ATEX - SN 2400590	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PY-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400591	CV-8407	II 2G	ATEX - SN 2400591	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PY-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400592	CV-8407	II 2G	ATEX - SN 2400592	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PY-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400593	CV-8407	II 2G	ATEX - SN 2400593	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PY-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400594	CV-8407	II 2G	ATEX - SN 2400594	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PY-055A	Hydrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400595	CV-8407	II 2G	ATEX - SN 2400595	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PY-055B	Hydrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400596	CV-8407	II 2G	ATEX - SN 2400596	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SDV-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SDV-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SDY-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SDY-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-SV-031	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-SV-032	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-SV-033	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-SV-034	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-SV-035	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-SV-036	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-SV-037	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

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Declaration of Conformity

Manufacturer:	**A.S.T. S.p.A.**
Pressure Equipment:	**CONTROL VALVE**
Job:	**CV2400221**
Type and Size:	**CV-8407 NPS 2" CLASS 300 RF Port 1"**
Fluid:	**Group 1 – Group 2**
Temperature and Pressure:	**80°C - 40 Bar g**
Qty:	**1**
Serial Number:	**2400593**

A.S.T. S.p.A. declare that the above-mentioned product has been designed and manufactured according to Customer's specifications, European Pressure Equipment Directive as follows:

PED 2014/68/UE			
FLUID	**Group no.**	**1**	**Notified body # 1370** **Bureau Veritas Italia S.p.A.** **Viale Monza 347 - 20126 Milano - Italy**
☒	**Cat. I, II, III**	**Module H**	
☐	**Cat. IV**	**Module B+D**	
☐	**Art. 4.3**		

and to ATEX Directive as follows:

ATEX 2014/34/EU	
☒ **II 2 G Ex h IIC T6…T1 Gb X**	**Technical file # TEC079 filed at Notified body # 1370** **Bureau Veritas Italia S.p.A.** **Viale Monza 347 - 20126 Milano - Italy**

The following Codes and Standards are applied, when needed
ASME B1.1, ASME B1.20.1, ASME PTC-25, ASME CA-1, ASME B16.34, ASME B16.5, ASME B16.10, ASME B16.20, ASME B16.21, ASME B16.25, ASME B16.11, ASME Sect. I, ASME Sect. II parts A-B-D, ASME Sect. V, ASME Sect. VIII, ASME BPV code cases, ASME Sect. IX, NB-23, API 6A, API 520, API 521, API 527, API 576, API 598, EN 19, EN 764-7, EN ISO 4126 parts 1-4-7-9-10, EN 1092, EN 1759, EN 12516 part 1 e 2, EN 12627, EN 12760, EN 12952-10, EN 12953-8, EN 13648-1, EN 10204, EN 12266-1, ISO 5208, ISO 15156 parts 1-2-3, ISO 9001, ISO 80079-36, ISO 80079-37, IEC 60079-0 MSS SP-55.

Construction materials used according to ASTM standard and subjected to Particular Material Appraisal. Alternatively, materials according to European harmonized standards are used.

Delegate for signature

Name: Luca Pressato
Title: Quality Assurance Manager
Date: 06/11/2024

Signature:

A.S.T. S.p.A.
Quality Assurance

GENERAL	1	Tag Number	P&ID Number			25-PV-046		123A90-DDL-PR-PID-80019	
	2	Service				HYDROGEN FROM STORAGE VESSEL (V-25001E) TO HYDROGEN VENT HEADER			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			3"-HY-180-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		3" / 3.05 mm		3" / 3.05 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312/TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			HYDROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 Barg		80 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	N2	H2	
	17	Flow Rate (Gas)				Nm^3/h	40	500	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg	min 1 - max 4	min 1 - max 4	
	20	Pressure Drop				bar	0.7	0.7	
	21	Inlet Temperature				°C	AMB	AMB	
	22	Inlet Density / Specific Gravity				kg/m^3	2.3 - 5.8	0.16 - 0.41	
	23	Inlet Compressibility Factor				-	1	1	
	24	Inlet Viscosity				cP	0.01	0,01	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-	1.3	1.3	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-	28	2	
CALCULATED RESULTS	28	Flow Coefficient Cv					1.719 / 0.9689	5.772 / 3.241	
	29	Travel				80.8%			
	30	Sound Pressure Level				83.01 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HT03C02RFH)			
	33	Body Size	Trim Size			2"		1"	
	34	Rated Cv	Characteristics.			13		(11) Equal%	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				ASTM A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 316L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				Grafite - VF1 (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured Plug (12, 13)			
	44	Rated Travel				25mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

						INSTRUMENT DATASHEET	CROSSWIND	
						Control Valve (Sheet 1 of 2)	ROSETTI MARINO	
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO		Sheet 26 of 37	
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO			
No.	Date	Description	By	Chkd	Appr	Code:	Dwg.No 123A90-DDL-IN-DS-40036	Rev. 01

ACTUATOR	50	MFR	Model	AST	SD13R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		20-44 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	Magnetic	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.
(2) Hydrogen service - Packing ISO 15848-1

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

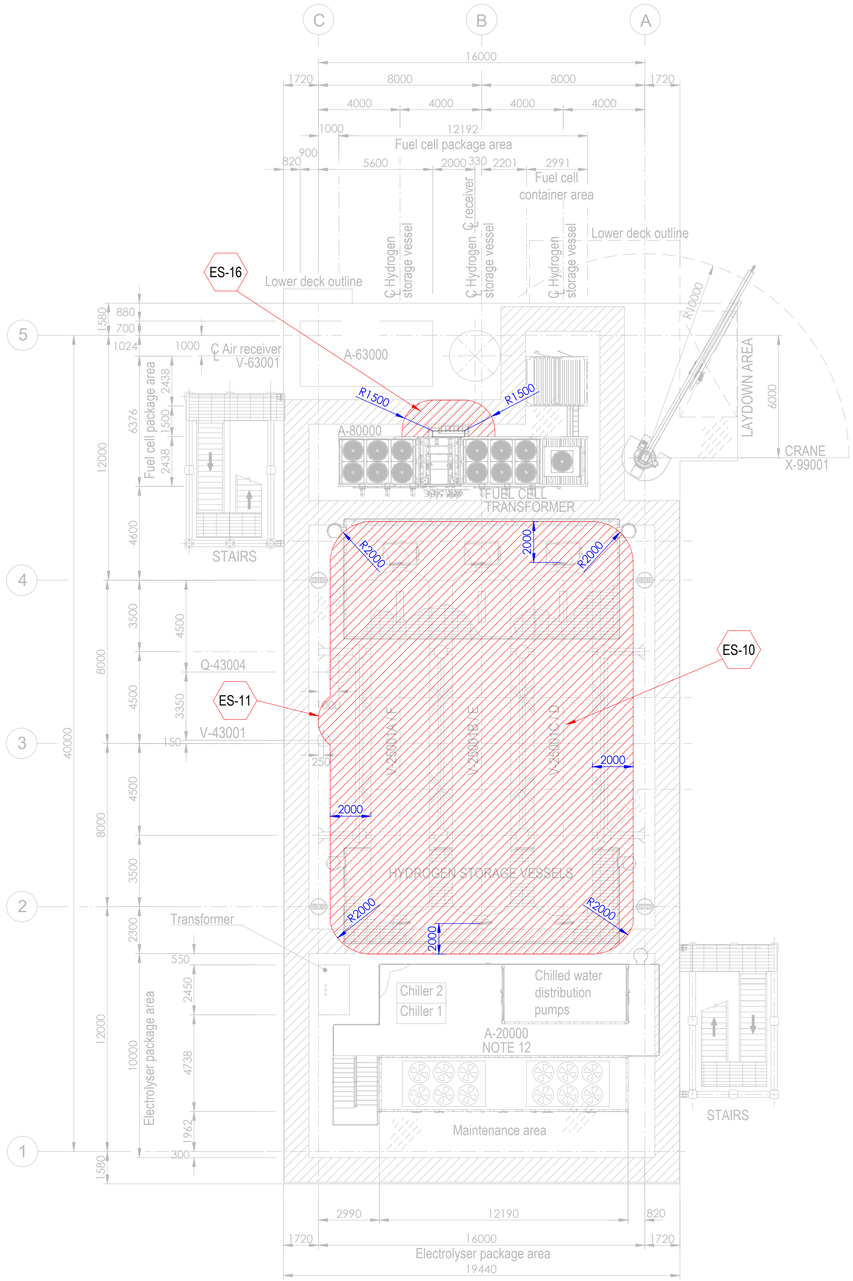
ROSETTI MARINO

Sheet 27 of 37

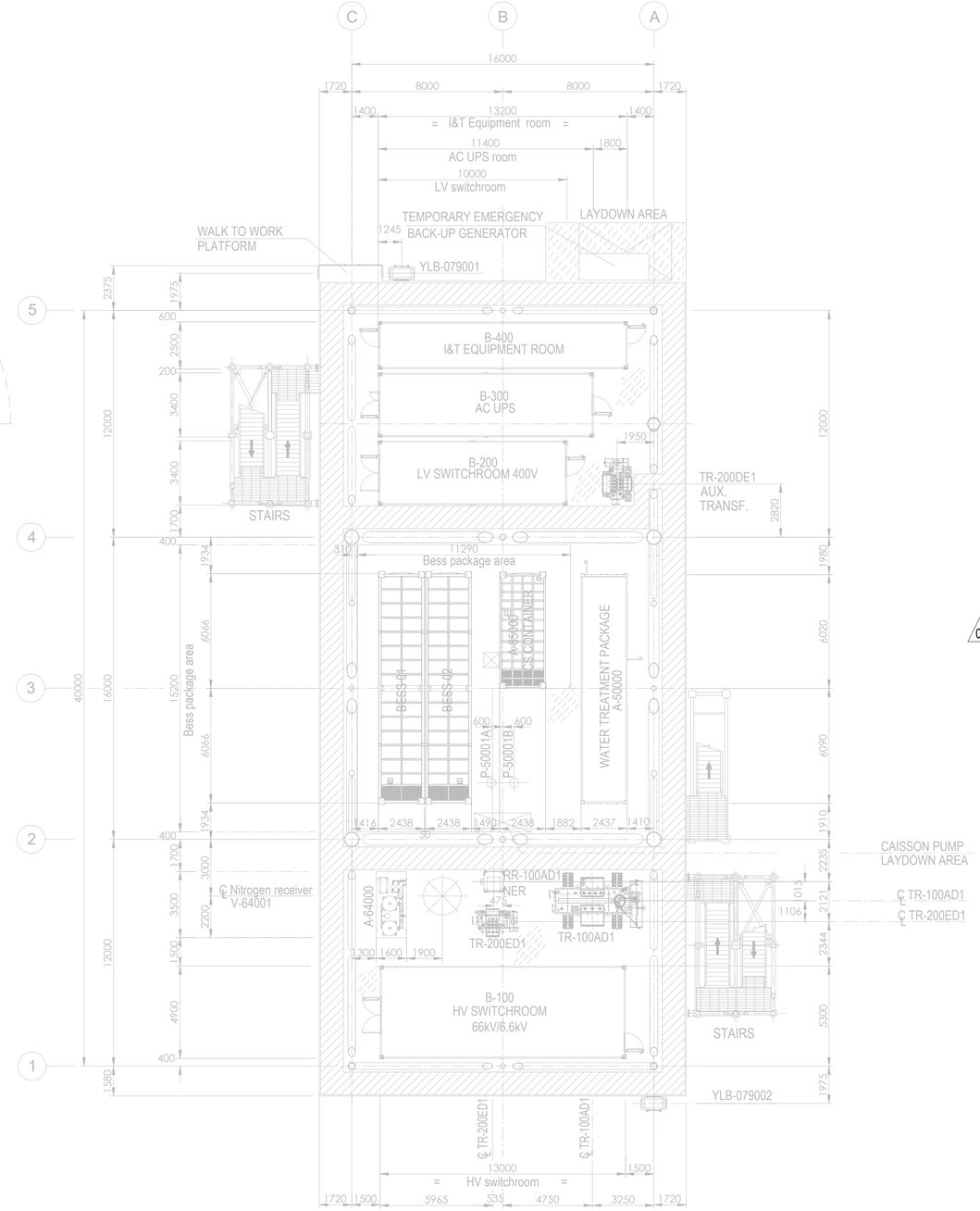
Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



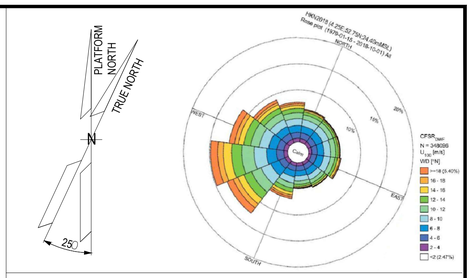
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

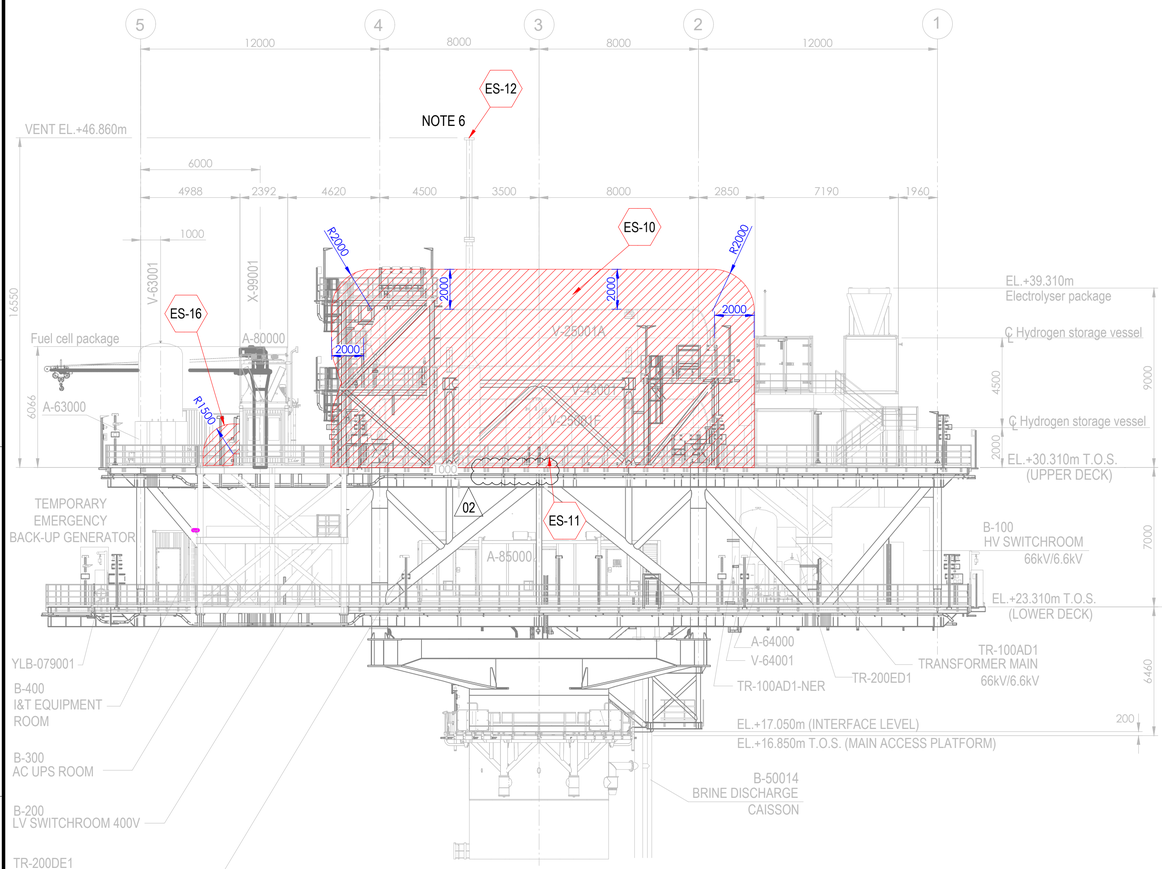
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

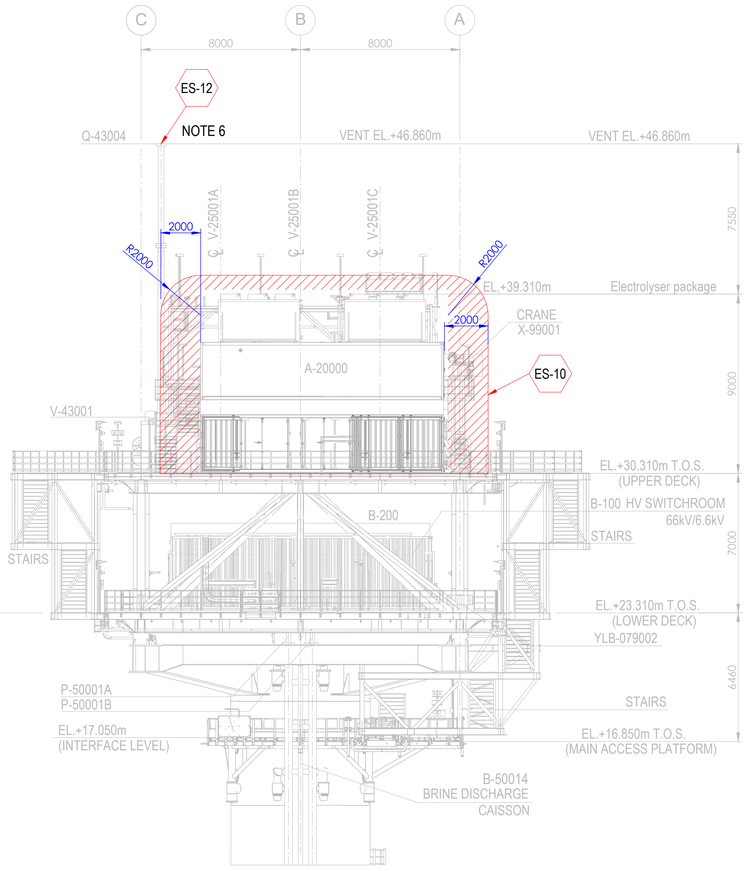
File Name : 123A90-DDL-SAF-DL-30022 Rev.02

DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

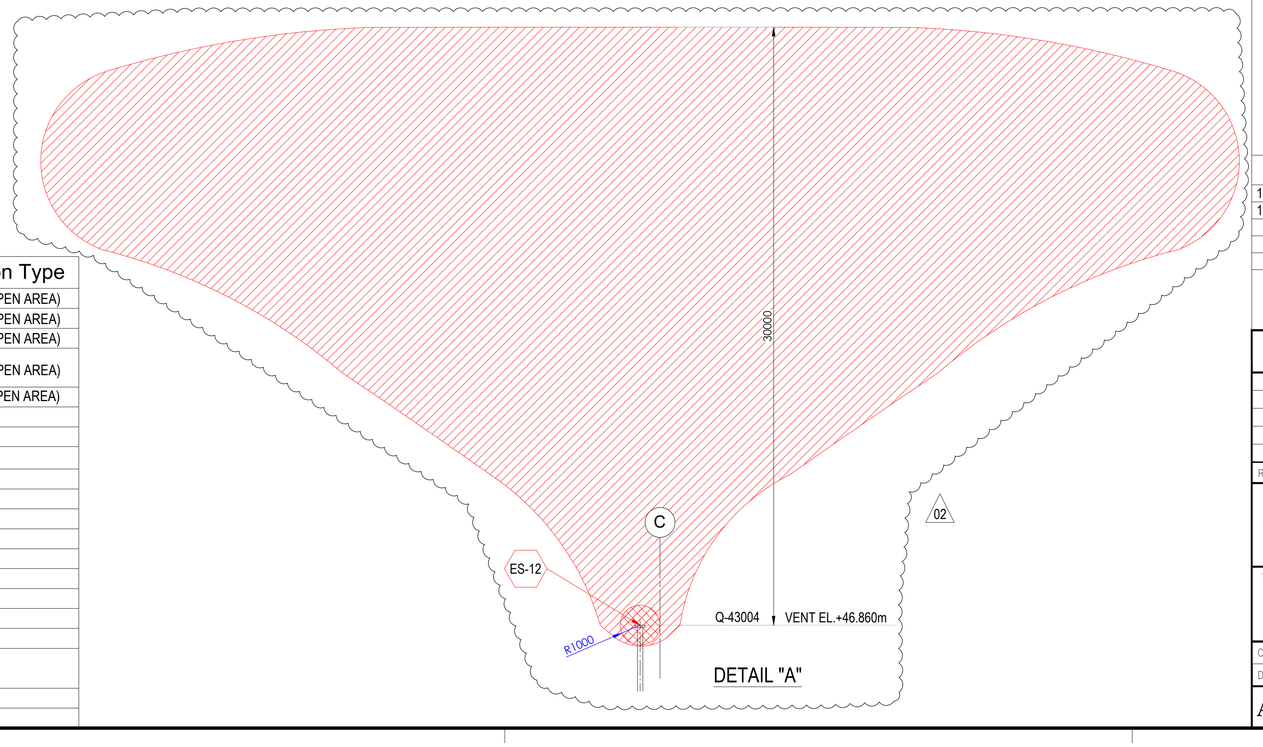


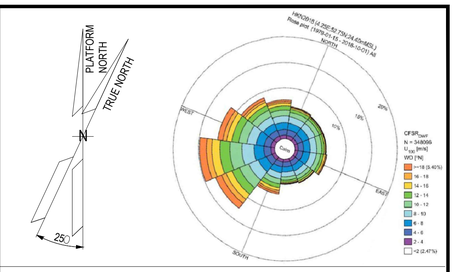
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-ZSHL-016	: Limit Switch Box - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001607	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		Batch n°: IT03B0128944			
Manufacturer	SOLDO			**Model**		SQN120E-20X23L7			
Cert No.	CML 19ATEX1359X			**Equipment Ambient Temp.**		-40°C to +80°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66/68

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	OK	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	25-ZSHL-016	: Limit Switch Box - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001607		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	OK	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-ZSHL-016	: Limit Switch Box - Vessel V-25001E Hydrogen Vent System		Dwg	123A90-DDL-PR-PID-80016	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001607	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

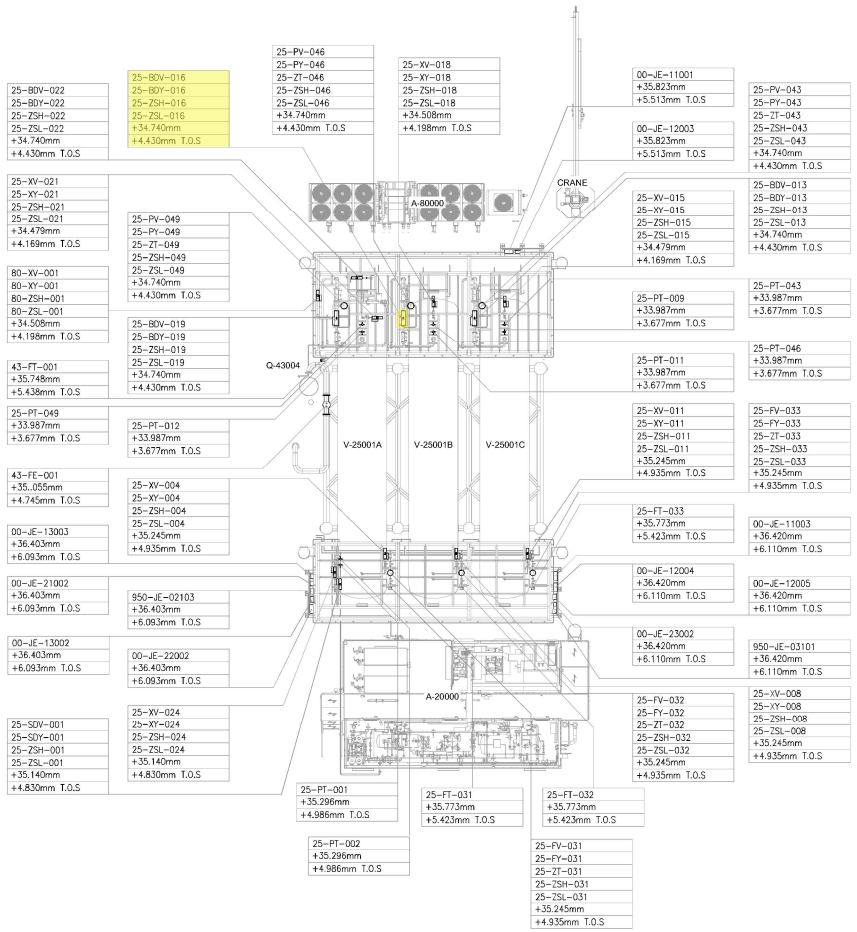
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-13	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-13T12:31:35.177Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T16:19:35.029Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

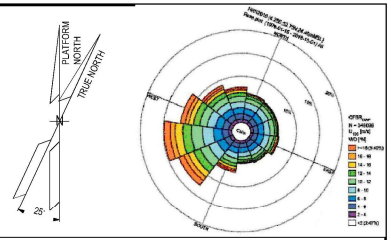
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

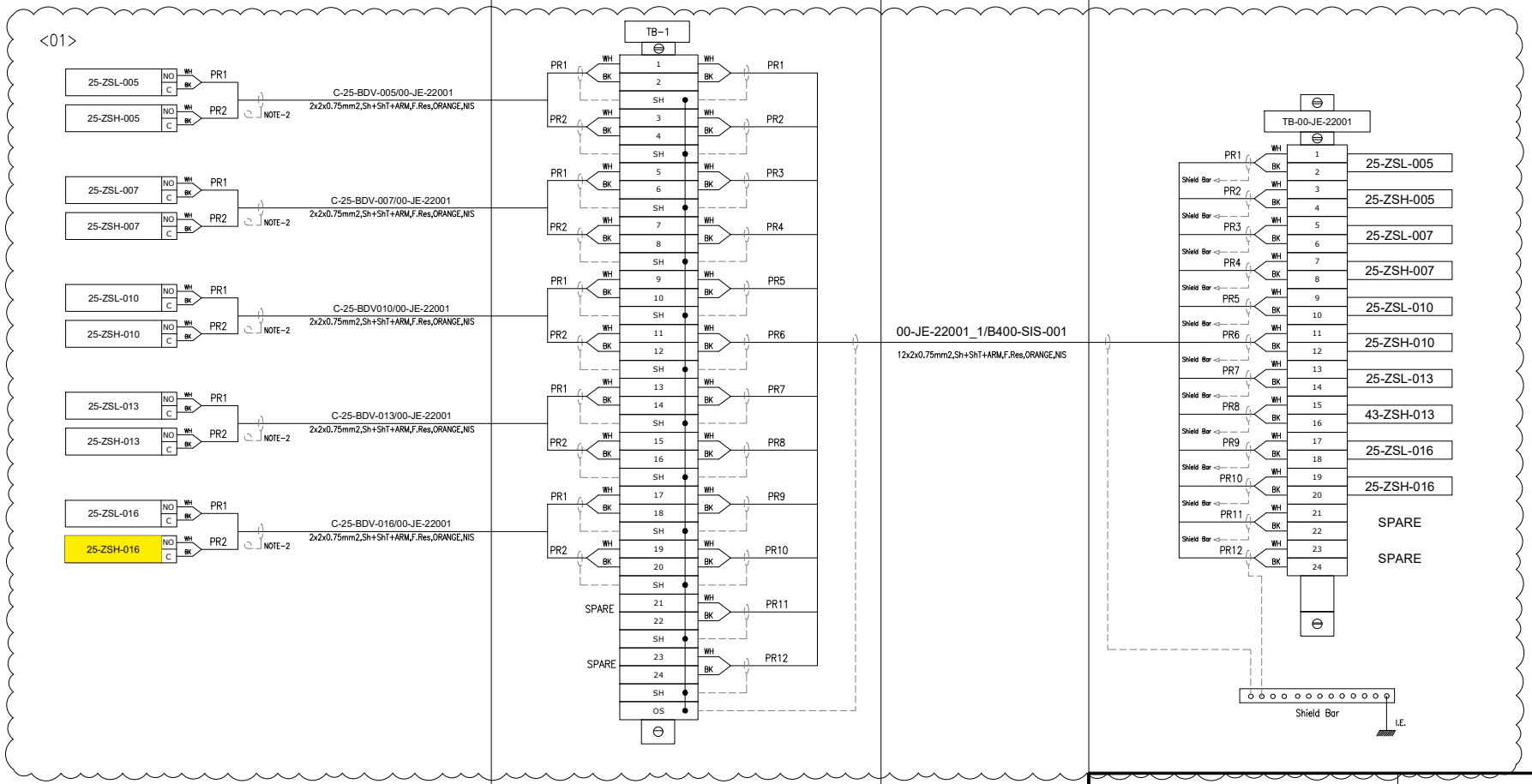
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40016 REV. 01

FIELD | MULTICABLE | I&T EQUIPMENT ROOM (ITER)

INSTRUMENTS | JUNCTION BOX 00-JE-22001 | No. | MARSHALLING CABINET B400-SIS-001



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

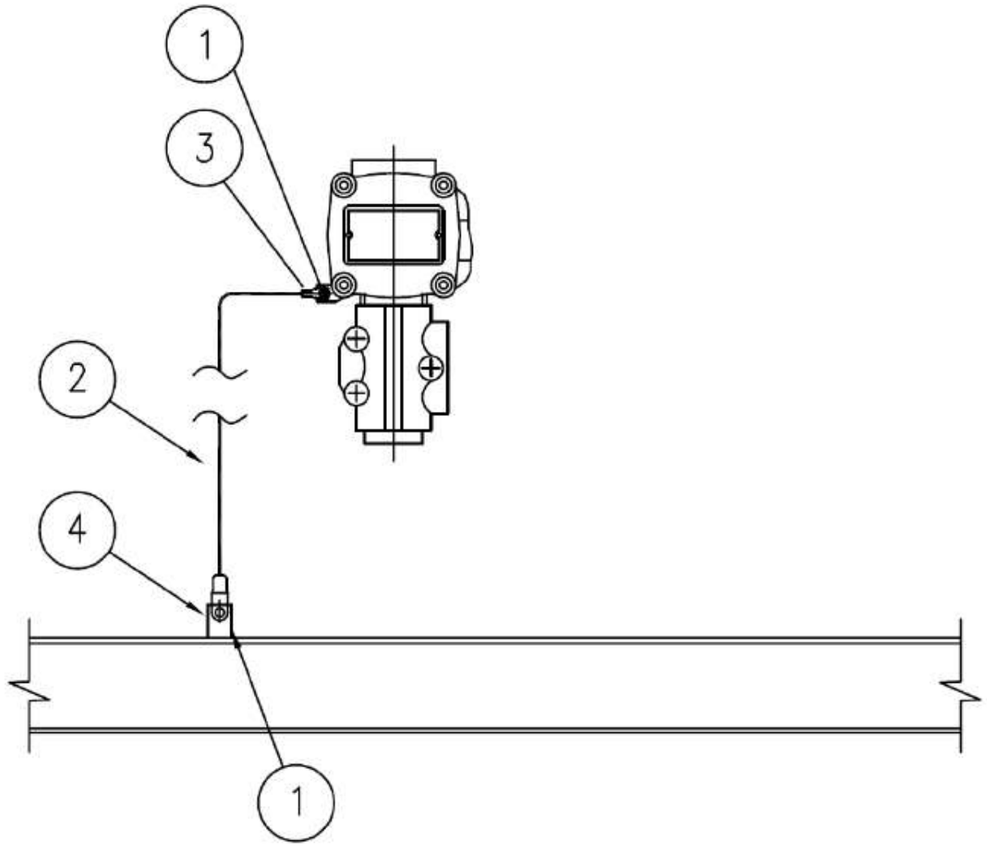
BASE LOAD POWER HUB (BLPH)
INSTRUMENT– SAFETY SYSTEM WIRING DIAGRAMS
00–JE–22001–SH.1 OF 2

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40016	010	01

File Name : 123A90-DDL-IN-DG-40016_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DD-20090
REV.: 2_I | DATE: 07/11/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

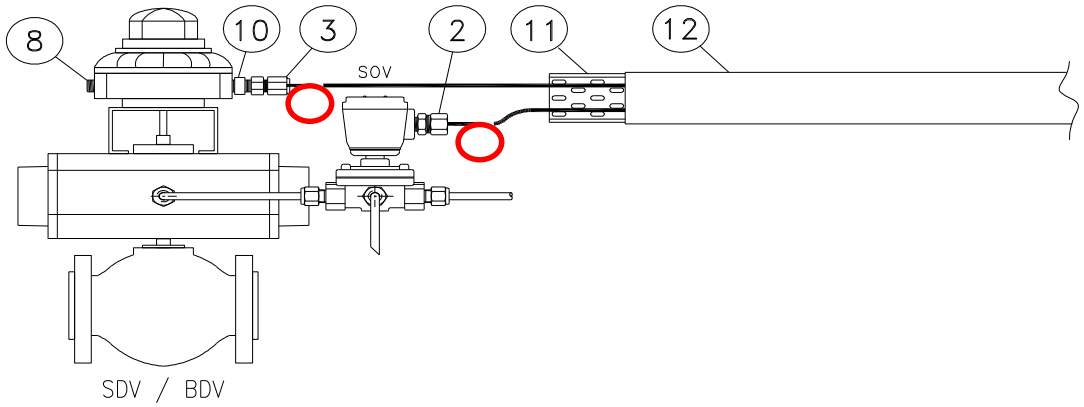
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

ELECTRICAL HOOK-UP FOR SDV/BDV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



	INSTRUMENT TAG
1	25-BDV-005
2	25-BDV-007
3	25-BDV-010
4	25-BDV-013
5	25-BDV-016
6	25-BDV-019
7	25-BDV-022
8	25-SDV-001
9	25-SDV-023
10	64-SDV-001
11	
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
10		Nickel Plated Brass Adaptor Ex-d/e IIC (or IIB + H2) T1	M20 Male x M25 Female	1
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
3		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1

This document undergoes an issuance cycle within EDMS "Fusionlive".
File: 123A90-DDL-IN-HD-40079_Rev.02 - Instrument Electrical Hook-up distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

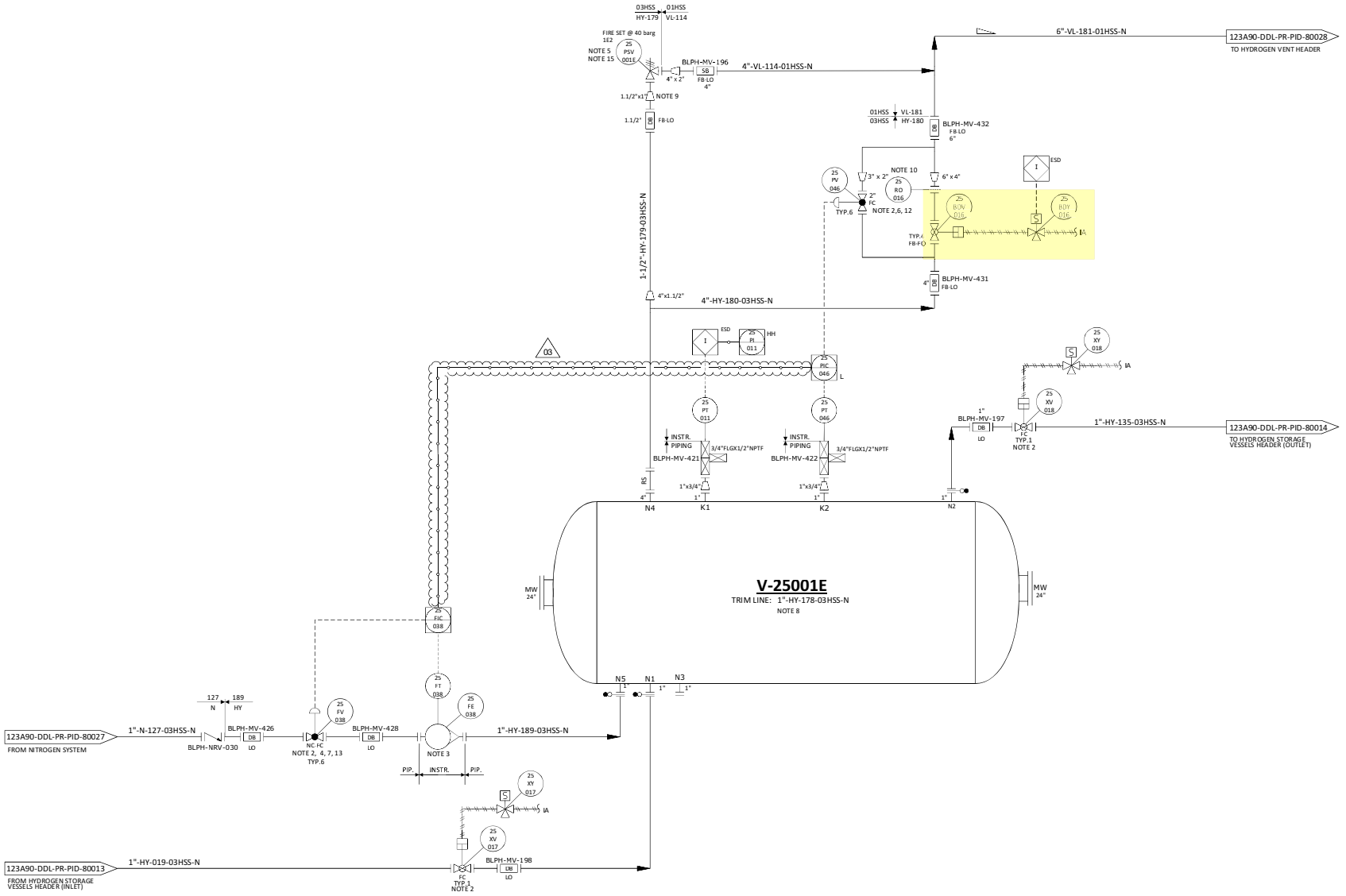
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

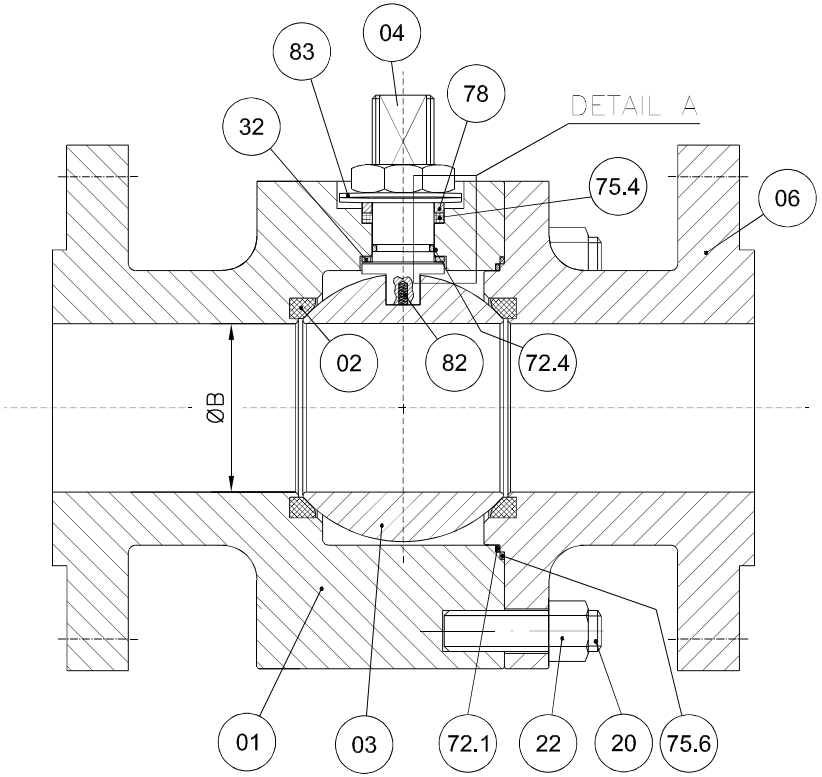
CROSSWIND

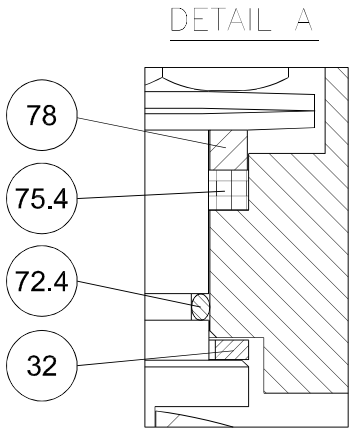
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

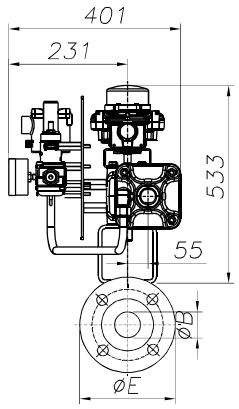
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

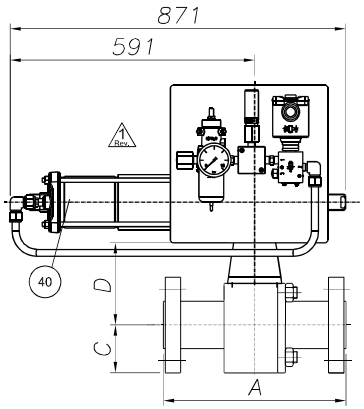
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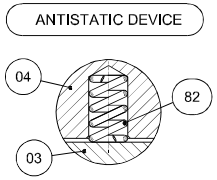




POS.	PART. NAME	MATERIAL
01	BODY	A182 F316/316L
02	SEAT	RPTFE
03	BALL	A182 F316/316L
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F316/316L
20	STUD	A193 B8M
22	NUT	A194 Gr.8M
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

1 Rev.

POS:	ITEM.:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
02	20	BA03C01RFH	25-BDV-005	1	4"	300	RF	305	102	127	209	254	74	95	169
03	30	BA03C01RFH	25-BDV-007	1	4"	300	RF	305	102	127	209	254	74	95	169
04	40	BA03C01RFH	25-BDV-010	1	4"	300	RF	305	102	127	209	254	74	95	169
05	50	BA03C01RFH	25-BDV-013	1	4"	300	RF	305	102	127	209	254	74	95	169
06	60	BA03C01RFH	25-BDV-016	1	4"	300	RF	305	102	127	209	254	74	95	169
07	70	BA03C01RFH	25-BDV-019	1	4"	300	RF	305	102	127	209	254	74	95	169

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-02-03-04-05-06-07

Rev.: 2

GENERAL	1	Tag Number	Location			25-BDV-016		25
	2	Service				HYDROGEN STORAGE TANK V-25001E DEPRESS.		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-180-03HSS-N		
	5	Line Size and Schedule	Inlet		Outlet	4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED) (35)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7,5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close : (12)		Open : (12)
	17	Operation (seconds)	Actual			Close : 0,3 minimum		Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form			4"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		(*)
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			A479 Tp 316		(*)
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-BDY-016 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-016 (9, 17) - Soldo SS		25-ZSH-016 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 Barg.

No.	Date	By	Chkd	Appr	Description
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.02

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Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-SV-038	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-SV-040	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-SV-043	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-SV-046	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-SV-049	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SV-055A	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SV-055B	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-XV-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XV-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-XV-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-XV-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-XV-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-XV-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-XV-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-XV-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-XV-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-XV-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5
25-XV-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-XV-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XV-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-XY-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XY-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-XY-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-XY-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-XY-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-XY-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-XY-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-XY-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-XY-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-XY-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5
25-XY-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-XY-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XY-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSH-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSH-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSH-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSH-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-ZSH-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSH-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-ZSH-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSH-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-ZSH-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSH-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5

No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
N.A	N.A	25-BDV-022	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-BDV-005	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-BDV-007	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-BDV-010	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-BDV-013	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-BDV-016	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-BDV-019	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-SDV-001	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-SDV-023	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	64-SDV-001	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-004	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-006	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-008	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-009	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-011	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-012	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-014	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-015	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-017	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-018	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-020	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-021	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-XV-024	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	50-XV-001	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	50-XV-002	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	50-XV-003	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	50-XV-004	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	80-XV-001	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	PLEASE CLARIFY	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	PAG 3 OF ATEX CERTIFICATE
N.A	N.A	25-BDV-022	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-BDV-005	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-BDV-007	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-BDV-010	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-BDV-013	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-BDV-016	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-BDV-019	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-SDV-001	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-SDV-023	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	64-SDV-001	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-004	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-006	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-008	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-009	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-011	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-012	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-014	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-015	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-017	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-018	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-020	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-021	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	25-XV-024	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	50-XV-001	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	50-XV-002	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	50-XV-003	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	50-XV-004	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE
N.A	N.A	80-XV-001	SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	PLEASE CLARIFY	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	WHICH PO? 240145	RFS	NOT RFS SCOPE	N.A	?	NONE

EU Type Examination Certificate CML 19ATEX1359X Issue 1

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **SOLDO™ SK and SQ Series Limit Switch Boxes**

3 Manufacturer **Rotork Instruments Italy srl**

4 Address **Via Portico 17**
24050
Orio al Serio (BG)
Italy

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 CML B.V., Chamber of Commerce No 67386717, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-31:2014

10 The equipment shall be marked with the following:

Ⅱ 2 G D

Ex db IIC T* Gb

Ex tb IIIC T*°C Db

Ta = -55°C to +*°C

**The ambient temperature classes and maximum surface temperature for dust depend upon the ambient temperature ranges. See Table in Section 11.*

11 Description

The SOLDO™ SK and SQ Series Limit Switch Boxes are electromechanical devices used to indicate the position of valves/actuators etc. by means of an electrical signal and an optional visual indicator. The metallic enclosure is constructed from aluminium (SK) or 316 or 316L stainless steel (SQ) and comprises of two enclosure halves secured with 4 x M6 stainless steel fasteners with a minimum property class of 500 MPa. An operating rod passes through each enclosure half for connection to the device being monitored. The rod operates the internal switch/sensor for signalling and passes through to the external indicator (when fitted). There are two threaded entries (M20 or ½" NPT) into the enclosure for cable entry.

The applicable ambient temperature ranges and corresponding Temperature Classes and Maximum Surface Temperatures for Dust are detailed in the table below:

Ambient Temp. Range	T Class	Maximum Surface Temp. for Dust
-55°C to +60°C	T6	T85°C
-55°C to +80°C	T5	T100°C
-55°C to +105°C	T4	T135°C

Rating:

Max. Voltage: 125 Vdc/250 Vac
Max. Current: 10 A
Max. Power: 10 W

Notes:

- Sira 12ATEX1098X is superseded by this certificate.
- The product covered by Issue 0 of this certificate remains identical to that previously covered by Sira 12ATEX1098X.
- Where Sira 12ATEX1098X is specified in other product certification, or other technical specifications, this certificate reference for the product shall be used in its place; updating of the other product certificate or technical specification is not required.

Variation 1

This variation introduced the following changes:

i. Introduction of power dissipation calculation as supporting certification document.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	04 Oct 2019	R12654A/00	Initial issue
1	27 Mar 2024	R17518A/00	Introduction of Variation 1

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

ii. The power dissipation inside the flameproof enclosure shall not exceed 10 W.

14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

i. The equipment is fitted with a non-conducting position indicator which could potentially generate an ignition-capable level of electrostatic charge under certain extreme conditions. Therefore, the equipment shall not be installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charge on the non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.

ii. The maximum temperature at the cable entry points may exceed 70°C. The user shall refer to the manufacturer's instructions document for guidance in respect of the selection of suitable cabling for the equipment.

iii. Dust layers in excess of 50 mm shall not be allowed to form on the equipment.

iv. The following have a minimum flamepath width (L) and maximum gap (i_c) other than that detailed in EN 60079-1 Table 3 and are detailed below:

Flamepath	**Joint Width (L) mm**	**Max. Gap (i_c) mm**
Cover shaft/Cover	26	0.097
Body Shaft/Body	26	0.097

Certificate Annex

Certificate Number **CML 19ATEX1359X**

Equipment **SOLDO™ SK and SQ Series Limit Switch Boxes**

Manufacturer **Rotork Instruments Italy srl**

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
SL-0202069-00	1 of 1	-	04 Oct 2019	Coperchio SQ certificazione ATEX IECEx UL
SL-0202070-00	1 of 1	-	04 Oct 2019	Coperchio SK certificazione ATEX IECEx UL
SL-0201093-00	1 of 1	-	04 Oct 2019	Corpo SQ certificazione ATEX IECEx UL
SL-0201096-00	1 of 1	-	04 Oct 2019	Corpo SK certificazione ATEX IECEx UL
SD-0201130-00	1 of 1	-	04 Oct 2019	Corpo SK certificazione ATEX IECEx
SD-0201132-00	1 of 1	-	04 Oct 2019	Corpo SQ certificazione ATEX IECEx
SD-0202091-00	1 of 1	-	04 Oct 2019	Cover SQ certificazione ATEX IECEx
SD-0202093-00	1 of 1	-	04 Oct 2019	Cover SQ certificazione ATEX IECEx
SL-0204138-00	1 of 1	-	04 Oct 2019	Stelo corpo SK-SQ certifcazione ATEX
SL-0204140-00	1 of 1	-	04 Oct 2019	Stelo coperchio SK-SQ certificazione ATEX
SD-0204186-01	1 of 1	01	04 Oct 2019	Shaft body SK sintered bronze bush approval ATEX IECEx UL
SD-0204187-01	1 of 1	01	04 Oct 2019	Shaft cover SK sintered bronze bush approval ATEX IECEx UL
SD-0204184-01	1 of 1	01	04 Oct 2019	Shaft body SQ sintered bronze bush approval ATEX IECEx UL
SD-0204185-01	1 of 1	01	04 Oct 2019	Shaft cover SQ sintered bronze bush approval ATEX IECEx UL
SD-0213155-00	1 of 1	-	04 Oct 2019	Retaining ring UNI 7434-8
SD-0213152-00	1 of 1	-	04 Oct 2019	Retaining washer for shaft UNI 7435 D2
SL-0208046-00	1 of 1	-	04 Oct 2019	Vite coperchio SK-SQ certificazione ATEX
SD-0207019-00	1 of 1	-	04 Oct 2019	O-ring shaft SK-SQ ATEX IECEx UL
SL-0207020-00	1 of 1	-	04 Oct 2019	O-ring coperchio SK-SQ certificazione ATEX
SD-0211053-03	1 of 1	3-1	04 Oct 2019	SQ metal plate IP66-67 ATEX/IECEx certification
SD-0211054-03	1 of 1	3-1	04 Oct 2019	SQ metal plate IP66-68 10 m ATEX/IECEx certitication
SD-0211055-03	1 of 1	3-1	04 Oct 2019	SK metal plate IP66-67 ATEX/IECEx certification

Certificate Annex

Certificate Number **CML 19ATEX1359X**

Equipment **SOLDO™ SK and SQ Series Limit Switch Boxes**

Manufacturer **Rotork Instruments Italy srl**

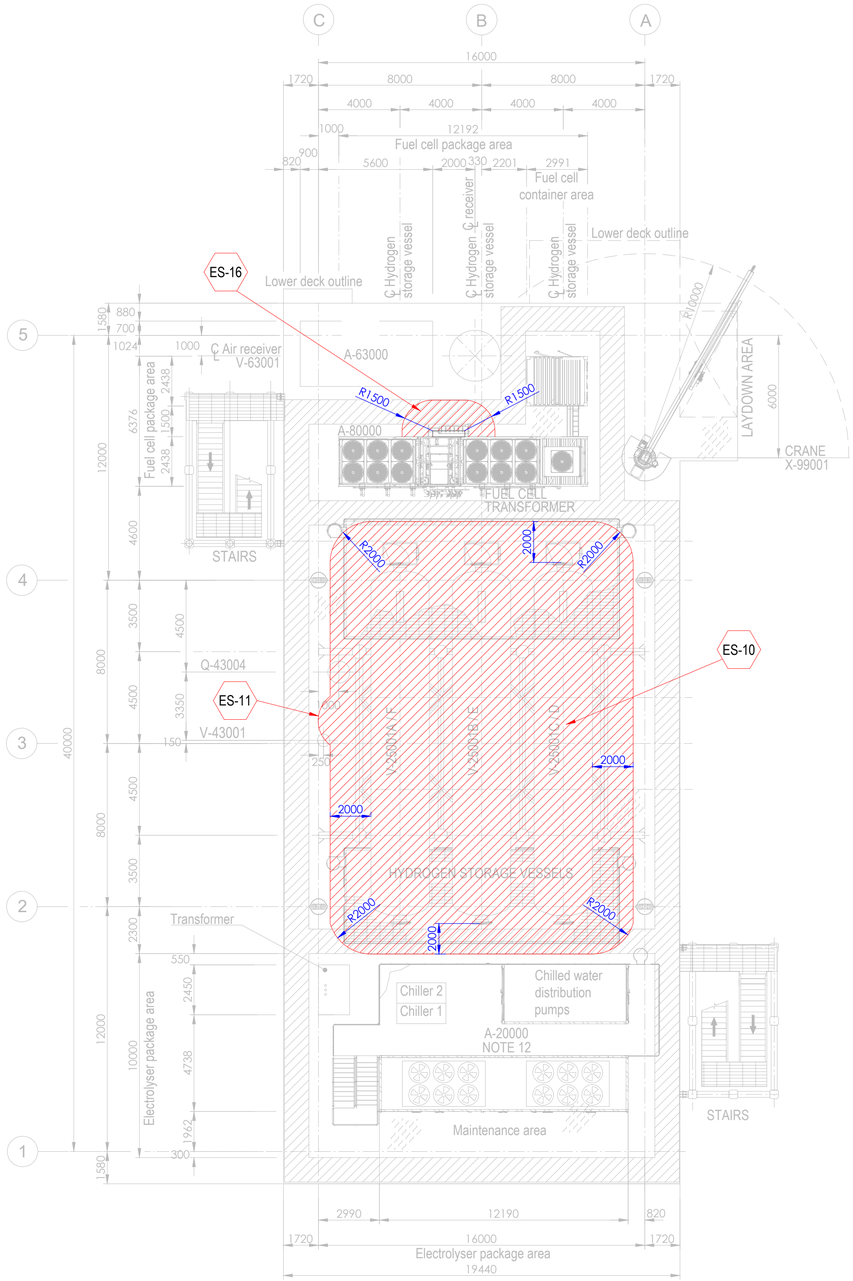
Drawing No	Sheets	Rev	Approved date	Title
SD-0211056-03	1 of 1	3-1	04 Oct 2019	SK metal plate IP66-68 10 m ATEX/IECEx certification
SD-0225231-00	1 of 1	-	04 Oct 2019	Assieme SQ-SK certificazione ATEX IECEx UL
SD-0225228-00	1 of 1	-	04 Oct 2019	SK assembly
SD-0225232-00	1 of 1	-	04 Oct 2019	SQ assembly
SD-0225293-00	1 of 1	-	04 Oct 2019	SQ assembly certificazione ATEX IECEx
SD-0225295-00	1 of 1	-	04 Oct 2019	SK assembly certificazione ATEX IECEx
SL-0212199-00	1 of 1	-	04 Oct 2019	Tipico Cicuito Stapato 5 Amp, Certificazione ATEX
SL-0223298-00	1 of 1	-	04 Oct 2019	Scheda C/Stapato 10 Amp, Certificazione ATEX
SD-0212239-00	1 of 1	-	04 Oct 2019	Circuito Stampato Destro DPDT SK
SD-0212232-00	1 of 1	-	04 Oct 2019	Circuito Stampato Verticale Sinistro DPDT SK
SD-0212230-00	1 of 1	-	04 Oct 2019	Circuito Stampato Sinistro DPDT SK
SD-0212240-00	1 of 1	-	04 Oct 2019	Circuito Stampato Verticale DPDT SK

Issue 1

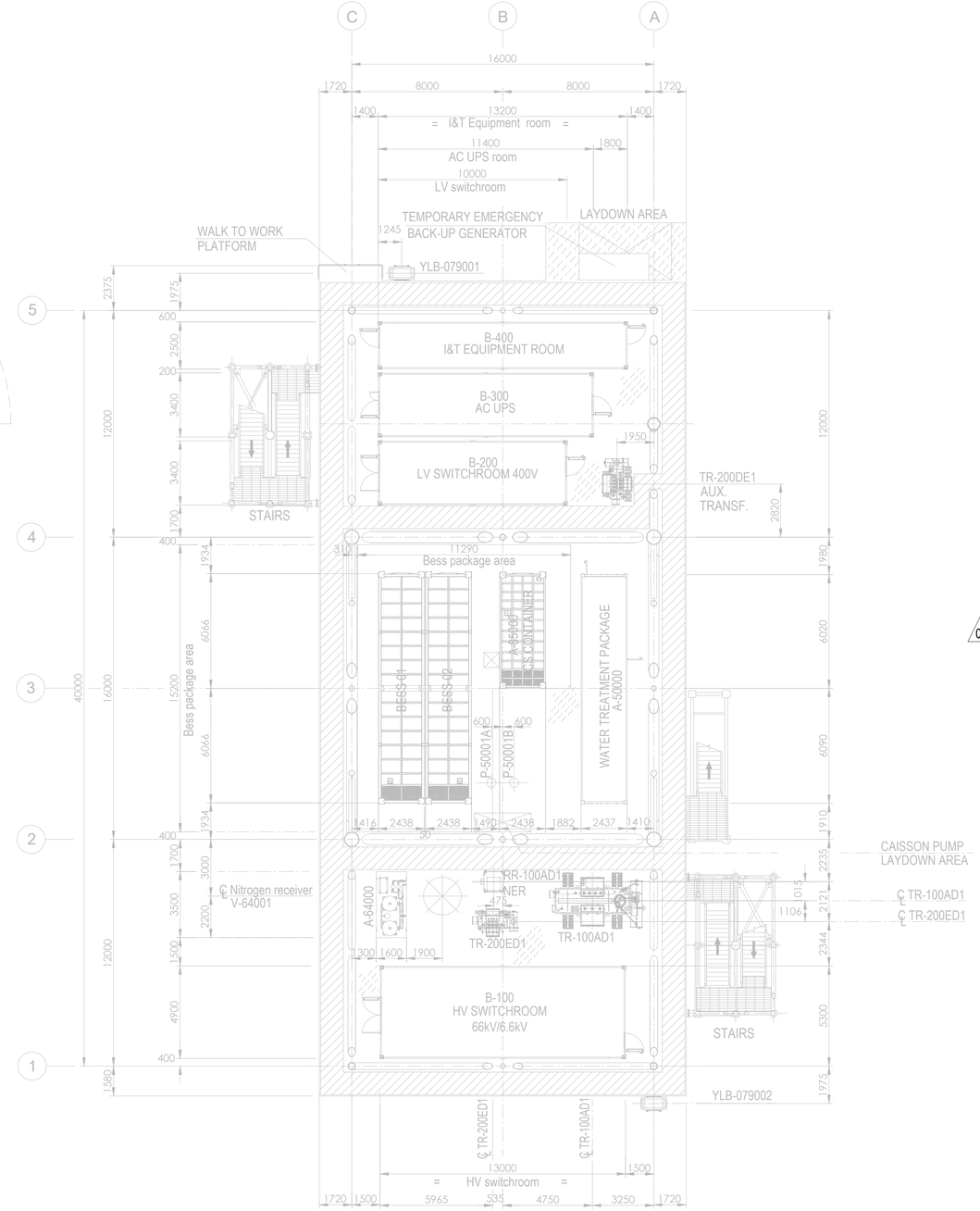
None.

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



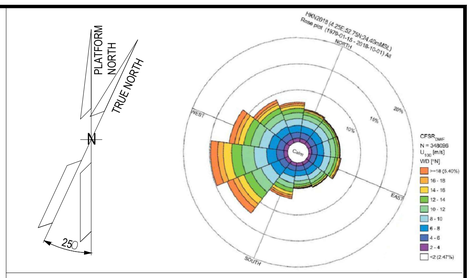
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

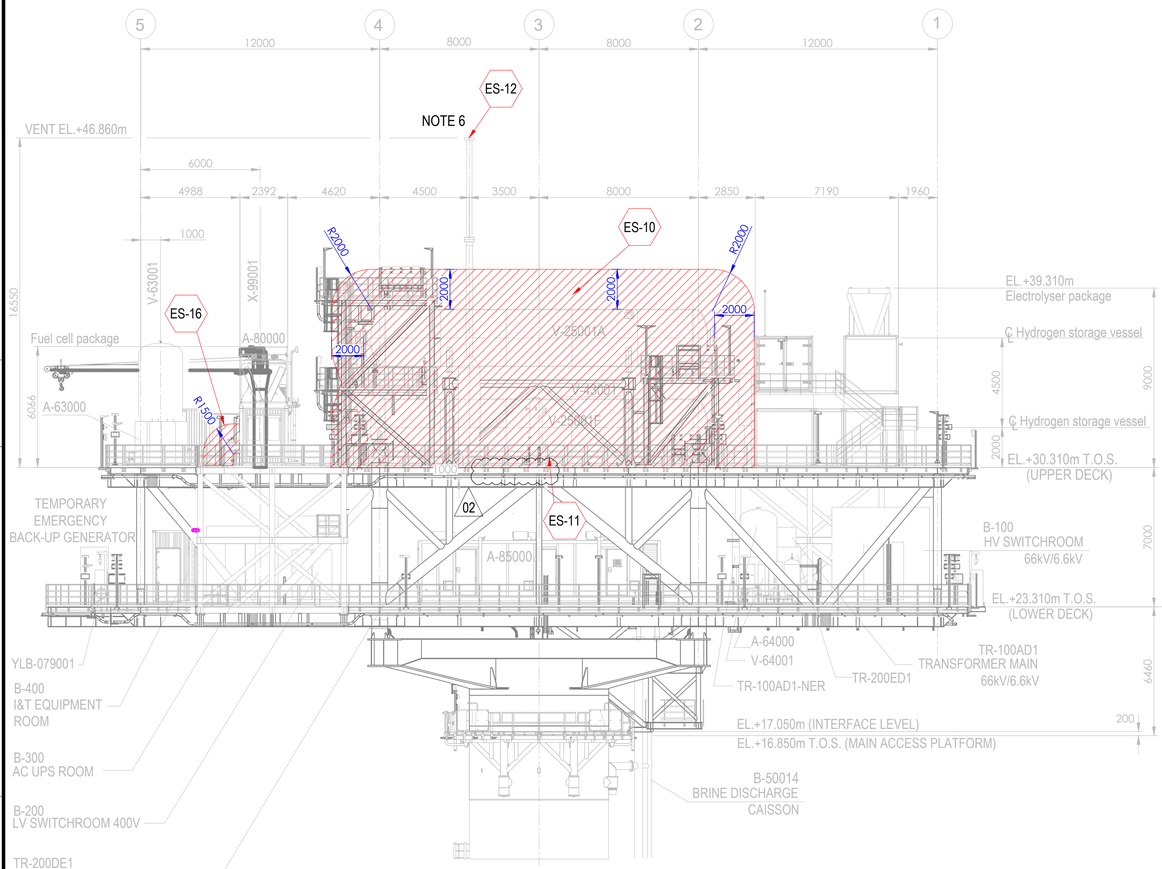
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

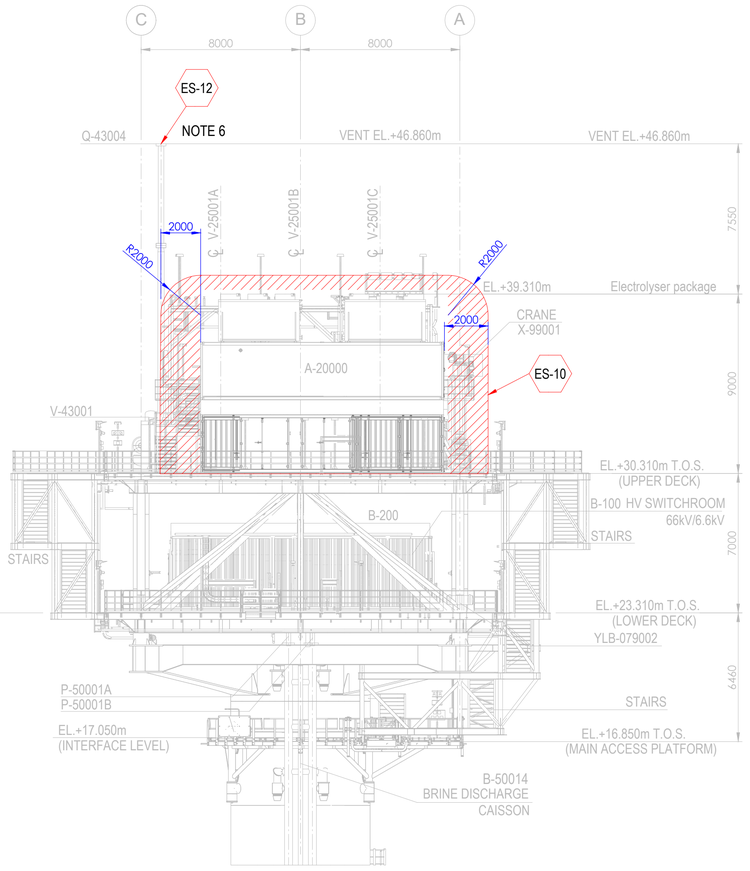
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

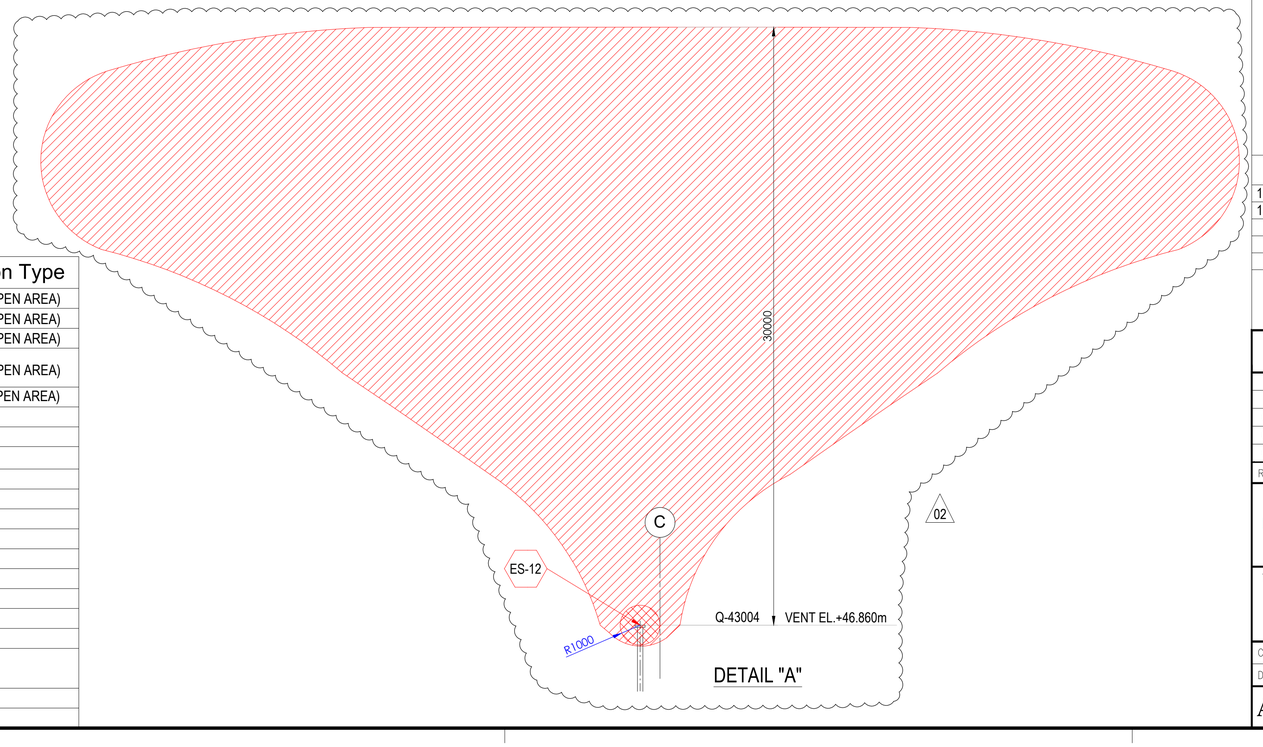


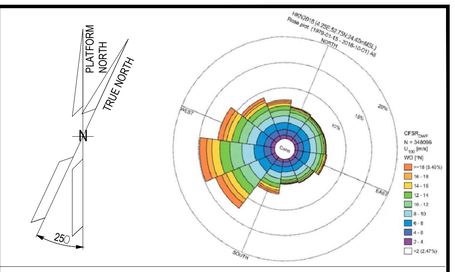
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PCV-016	: Air Set Filter - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001614	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK	Discipline: ATEX	Form: CJX01 — Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		FL20524-1855			
Manufacturer	BIFOLD			**Model**		SH05-FR-SR-MD-10-X4			
Cert No.	Declaration of Conformity by Manufacturer			**Equipment Ambient Temp.**		-20 °C to + 40 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		OK	
	Physical check	x	OK	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PCV-016	: Air Set Filter - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001614		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PCV-016	: Air Set Filter - Vessel V-25001E Hydrogen Vent System		Dwg	123A90-DDL-PR-PID-80016	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001614	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

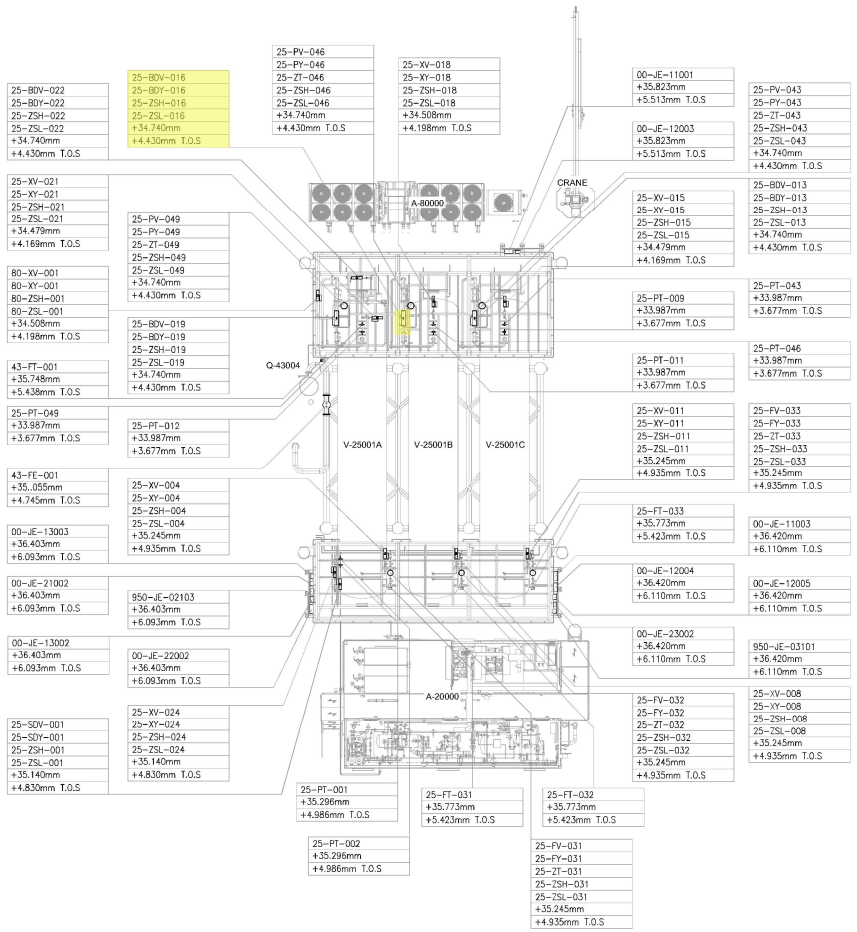
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-04	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:14:06.580Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-17T14:37:39.011Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

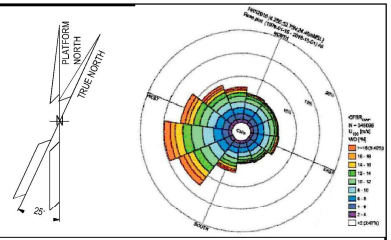
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40081

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

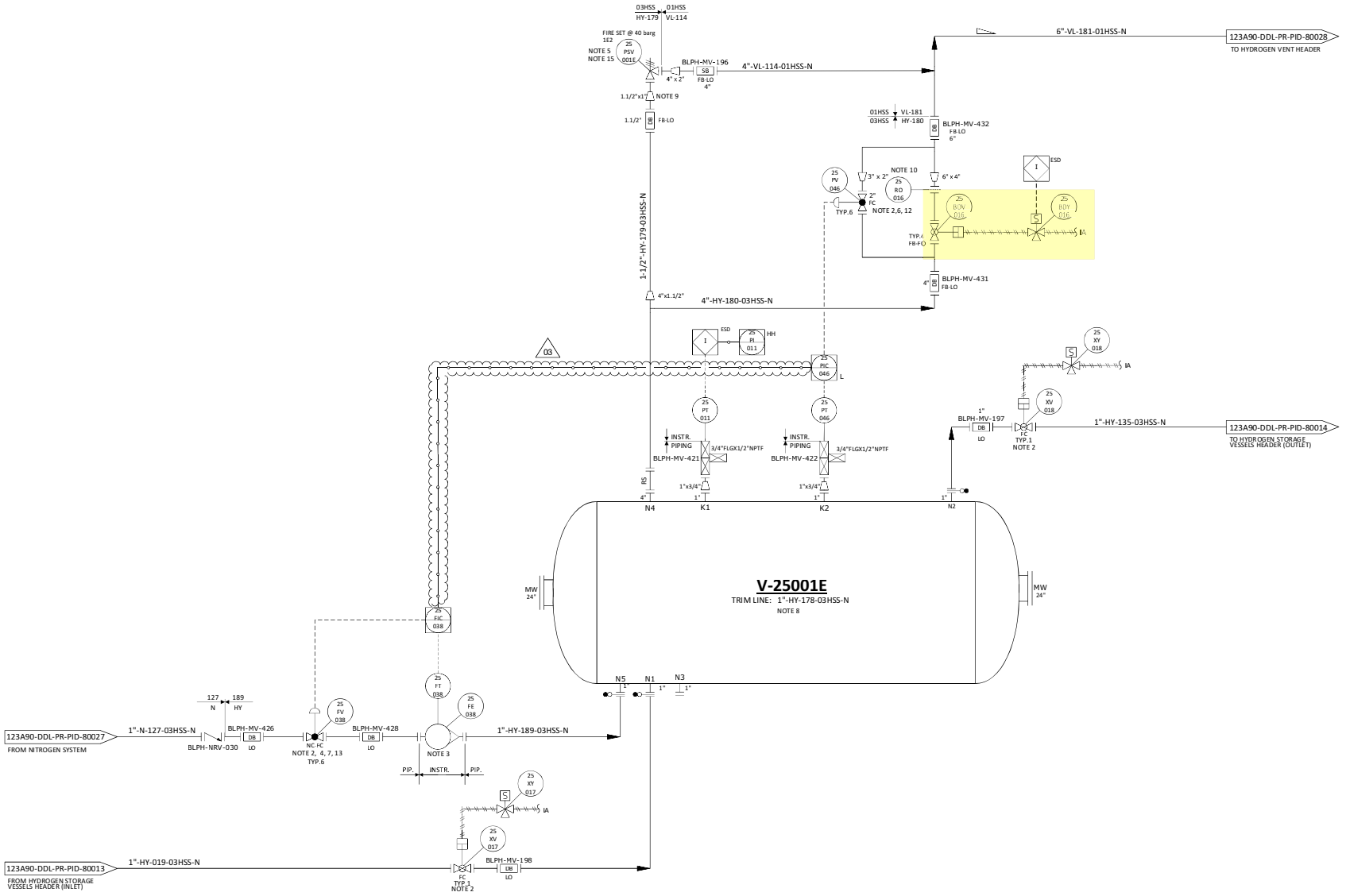
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

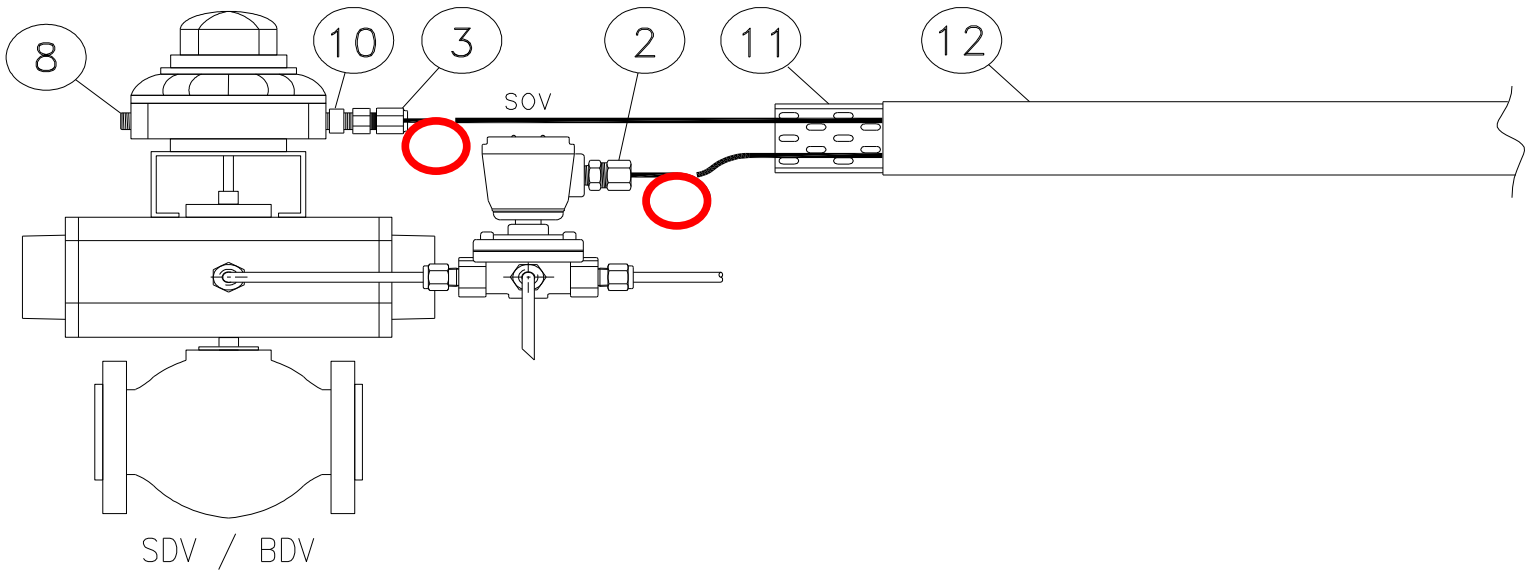
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 16 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR SDV/BDV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



SDV / BDV

INSTRUMENT TAG	
1	25-BDV-005
2	25-BDV-007
3	25-BDV-010
4	25-BDV-013
5	25-BDV-016
6	25-BDV-019
7	25-BDV-022
8	25-SDV-001
9	25-SDV-023
10	64-SDV-001
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NOTE:

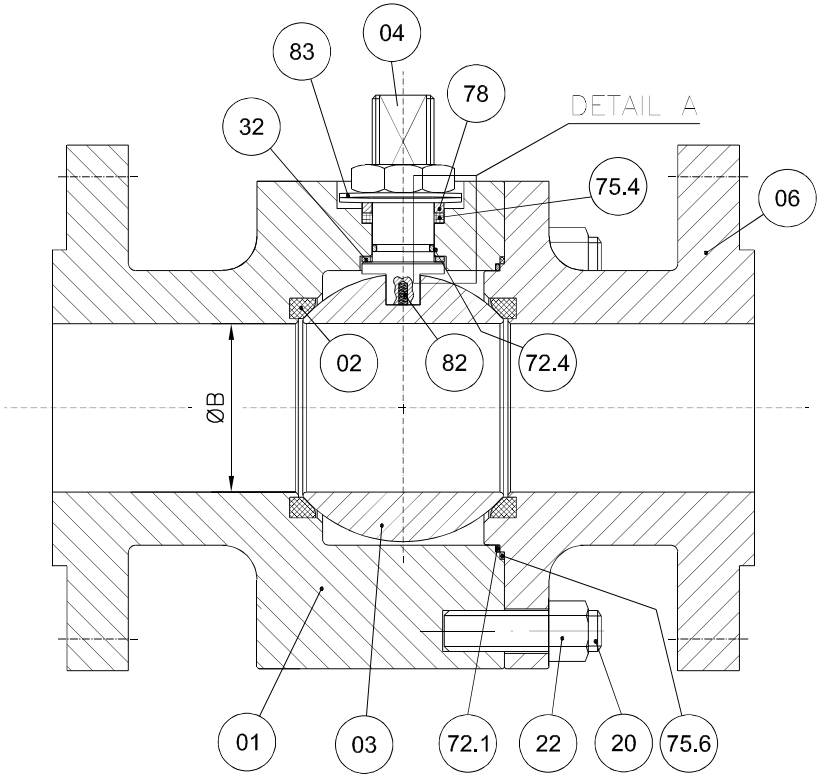
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

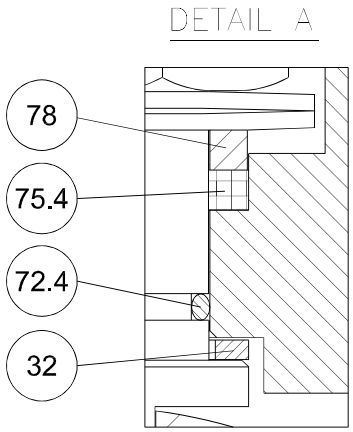
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

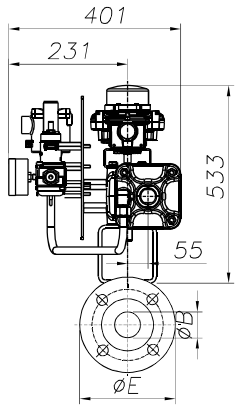
POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
10		Nickel Plated Brass Adaptor Ex-d/e IIC (or IIB + H2) T1	M20 Male x M25 Female	1
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
3		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1

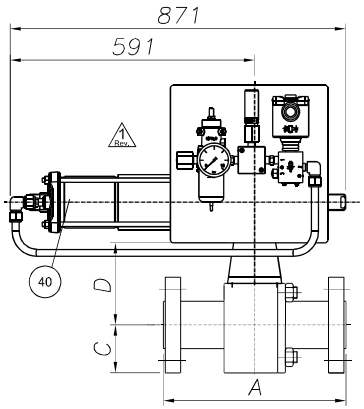
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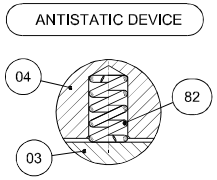




POS.	PART. NAME	MATERIAL
01	BODY	A182 F316/316L
02	SEAT	RPTFE
03	BALL	A182 F316/316L
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F316/316L
20	STUD	A193 B8M
22	NUT	A194 Gr.8M
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

1 Rev.

POS:	ITEM.:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
02	20	BA03C01RFH	25-BDV-005	1	4"	300	RF	305	102	127	209	254	74	95	169
03	30	BA03C01RFH	25-BDV-007	1	4"	300	RF	305	102	127	209	254	74	95	169
04	40	BA03C01RFH	25-BDV-010	1	4"	300	RF	305	102	127	209	254	74	95	169
05	50	BA03C01RFH	25-BDV-013	1	4"	300	RF	305	102	127	209	254	74	95	169
06	60	BA03C01RFH	25-BDV-016	1	4"	300	RF	305	102	127	209	254	74	95	169
07	70	BA03C01RFH	25-BDV-019	1	4"	300	RF	305	102	127	209	254	74	95	169

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-02-03-04-05-06-07

Rev.: 2

GENERAL	1	Tag Number	Location			25-BDV-016		25
	2	Service				HYDROGEN STORAGE TANK V-25001E DEPRESS.		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-180-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED) (35)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close :	(12)	Open : (12)
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form			4"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		(*)
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			A479 Tp 316		(*)
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-BDY-016 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-016 (9, 17) - Soldo SS		25-ZSH-016 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
1	IFR	25-BDV-022	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
2	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
3	N.A		floating ball valve	N.A	FLUITEK	1" 300#	2400620010001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
4	IFR		ACTUATOR	N.A	RFS	CP/S-035-080A/AA	AF771400101	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
5	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
6	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323301	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
7	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
8	IFR	25-BDV-005	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
9	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
10	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620020001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
11	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400201	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
12	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
13	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323309	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
14	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
15	IFR	25-BDV-007	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
16	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
17	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620030001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
18	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400301	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
19	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
20	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323302	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
21	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
22	IFR	25-BDV-010	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
23	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
24	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620040001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
25	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400401	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
26	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
27	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323292	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
28	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
29	IFR	25-BDV-013	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
30	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
31	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620050001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
32	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400501	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
33	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
34	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323305	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
35	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
36	IFR	25-BDV-016	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
37	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
38	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620060001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
39	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400601	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
40	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
41	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323295	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
42	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
43	IFR	25-BDV-019	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
44	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
45	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620070001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
46	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400701	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
00-JE-11001	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11002	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-11003	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-11004	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11005	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12001	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12002	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12003	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12004	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12005	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12006	PCS Digital Input JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13001	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13002	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-13003	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa		CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-21001	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87929	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-21002	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-22001	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87933	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-22002	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87934	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-23001	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-23002	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
25-BDV-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDV-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDV-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-BDY-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDY-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDY-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-FT-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FT-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-FT-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-FT-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FV-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FV-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FV-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FV-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FV-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FV-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FY-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407	II 2G	ATEX - SN 2400583	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FY-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407	II 2G	ATEX - SN 2400584	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FY-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407	II 2G	ATEX - SN 2400585	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FY-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407	II 2G	ATEX - SN 2400586	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FY-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407	II 2G	ATEX - SN 2400587	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FY-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407	II 2G	ATEX - SN 2400588	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-031	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

Document Reference: - D of C Baseefa14ATEX0223DR_01

EU Declaration of Conformity

Manufacturer: Bifold Fluidpower Ltd
Address: Broadgate, Oldham Broadway Business Park,
Chadderton, Oldham
Greater Manchester
OL9 9XA
UK

Tel: +44 (0)161-345-4777
E-mail: sales@bifold.co.uk

Product Type (Object of the Declaration):

Type SH, ASH & SC Filter Regulator

Declaration statement:

On behalf of the above company, I declare that, the *Object of the Declaration* described above is in conformity with the relevant Union harmonisation legislation: Directive 2014/34/EU, with the following limitation;

Limitation on the validity of the Declaration of Conformity:

None

Provisions of the Directive fulfilled by the Equipment:

Group II Category 2 Gb Db Ex c IIC T6

Bifold Technical File Reference:

DF-FP_SH_20140627114952

Technical File lodged with Notified Body:

SGS Fimko Oy 0598 Helsinki, Finland

SGS Baseefa Technical File Reference:

Baseefa14ATEX0223DR

Technical basis for compliance with the Essential Health and Safety Requirements of Directive 2014/34/EU: -

BS EN 13463-1: 2009 – Non-electrical equipment for use in potentially explosive atmospheres. Basic method and requirements
BS EN 13463-5: 2011 – Non-electrical equipment for use in potentially explosive atmospheres. Protection by constructional safety 'c'

(A review against the following harmonised standards, shows no significant changes relevant to this equipment): -

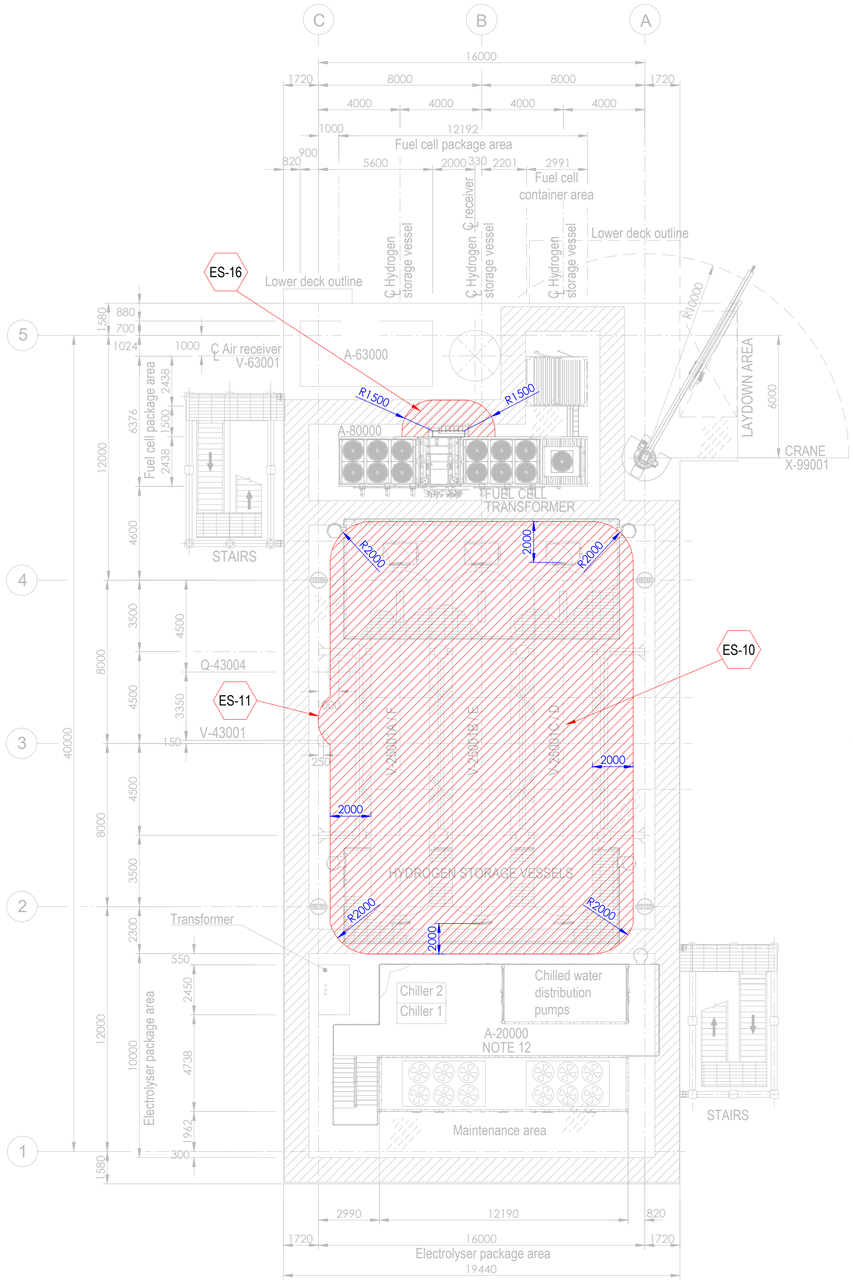
BS EN ISO 80079-36: 2016 – Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Basic method and requirements
BS EN ISO 80079-37: 2016 – Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"

Paul Barrow
Quality Manager

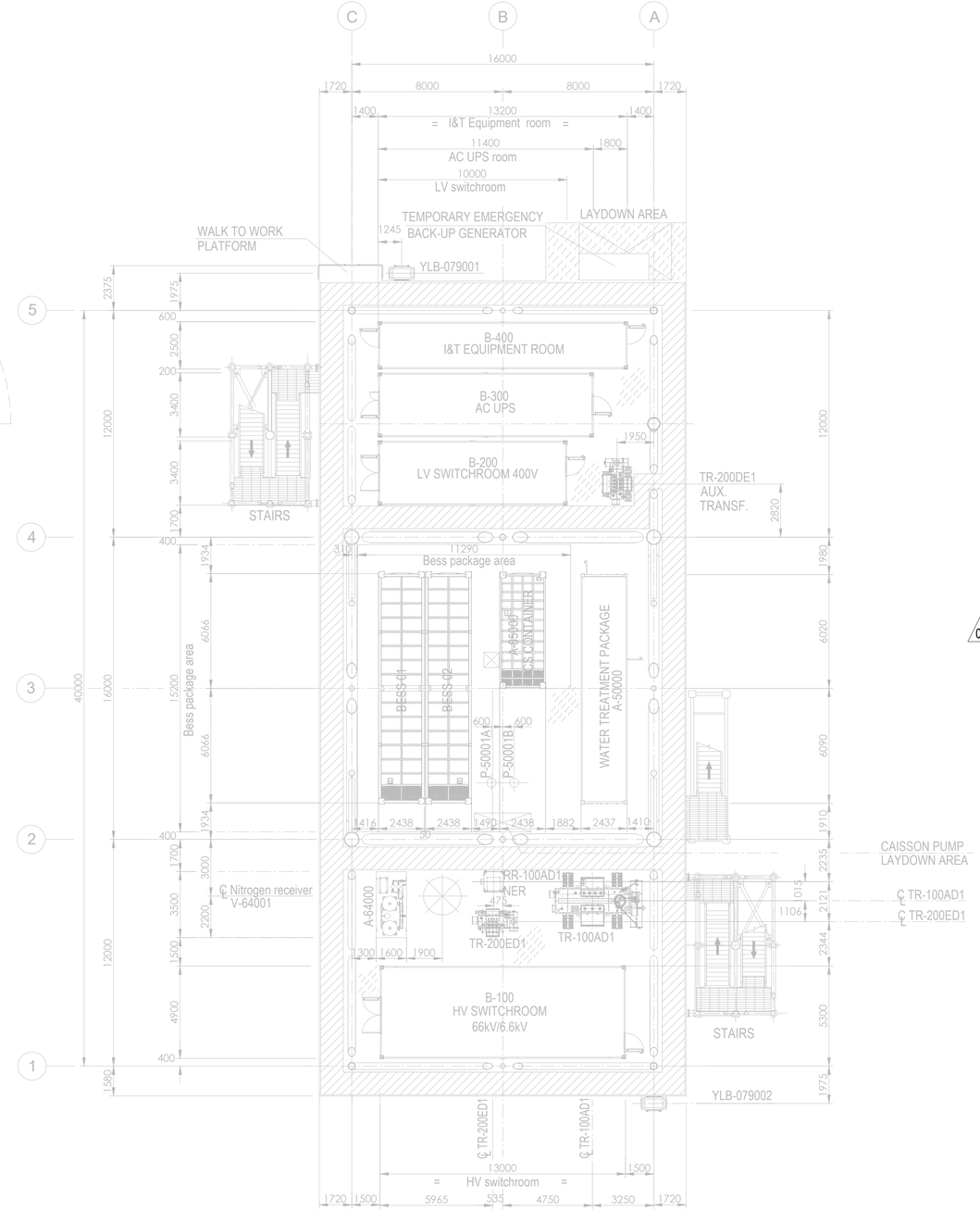
4th November 2020

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



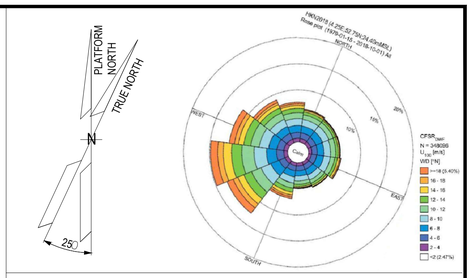
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

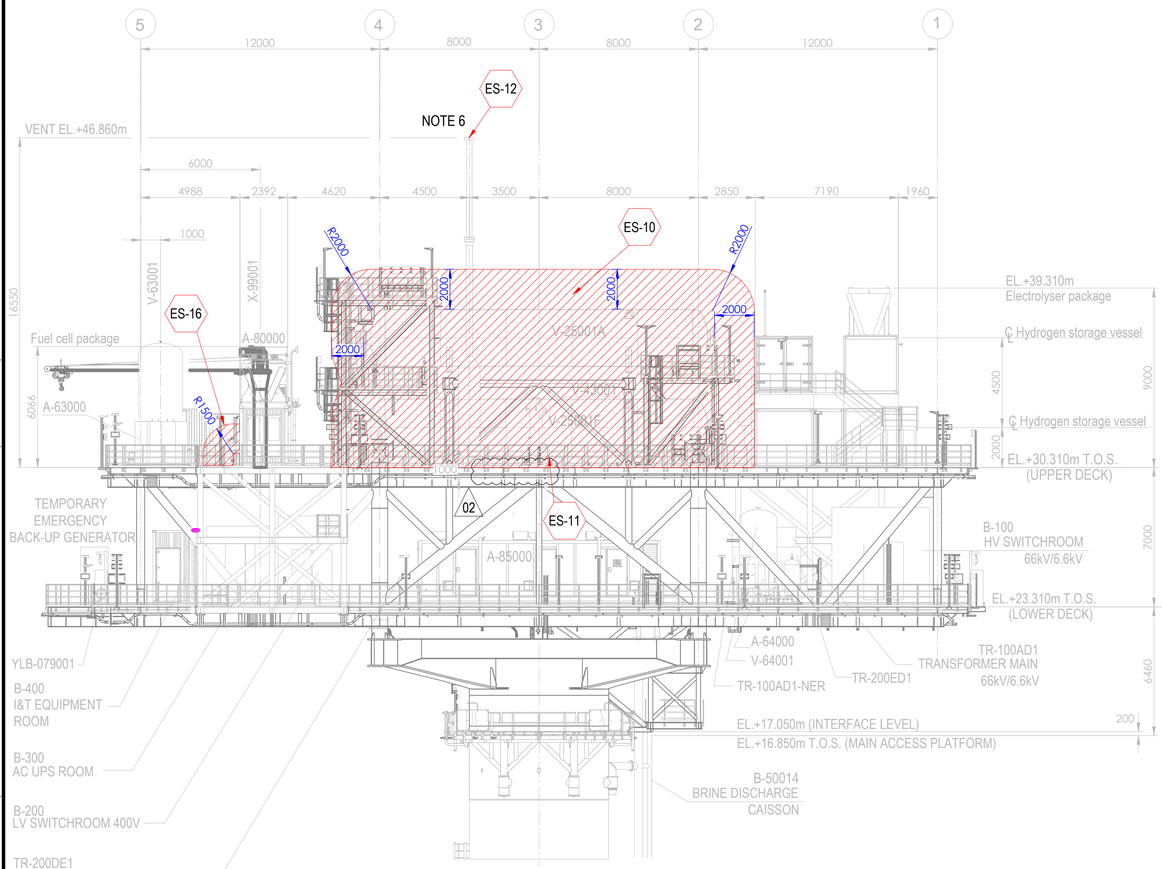
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

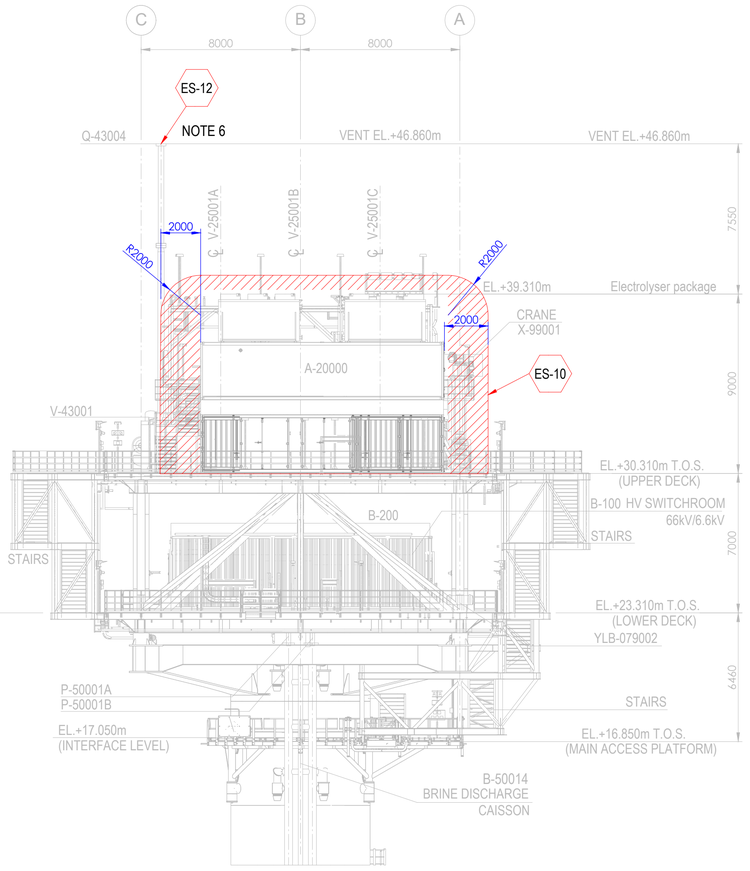
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

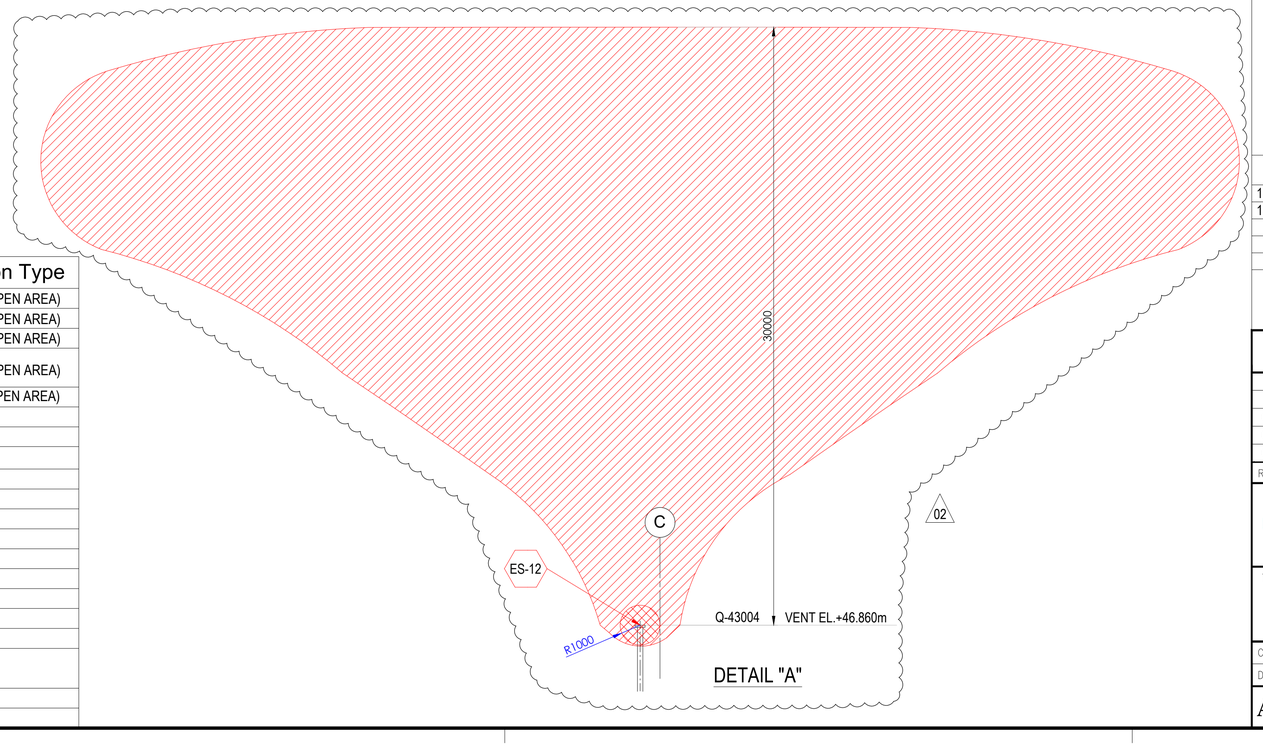


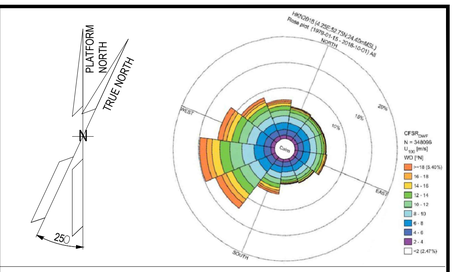
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-FY-038	: Electropositioner - Nitrogen to V-25001E Vessel	Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001703	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	24050890				
Manufacturer	TISSIN			**Model**	TS905LC41S30				
Cert No.	ESP 19 ATEX 1 112 X			**Equipment Ambient Temp.**	-40°C +70°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	25-FY-038	: Electropositioner - Nitrogen to V-25001E Vessel			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001703		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	OK	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-FY-038	: Electropositioner - Nitrogen to V-25001E Vessel		Dwg	123A90-DDL-PR-PID-80016	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001703	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

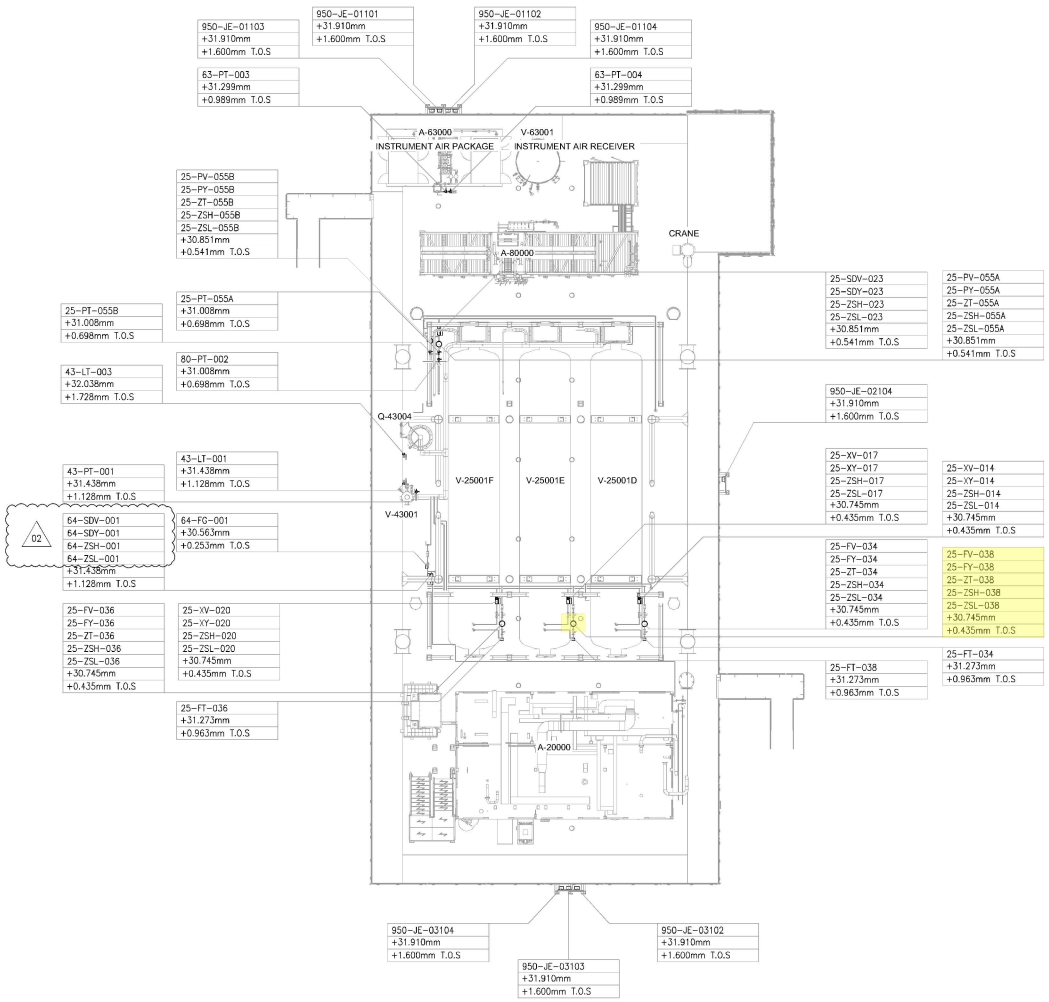
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-23	2025-01-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-23T15:41:29.303Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-25T12:35:48.063Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

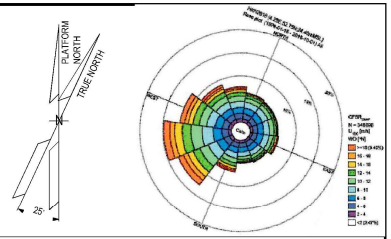
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

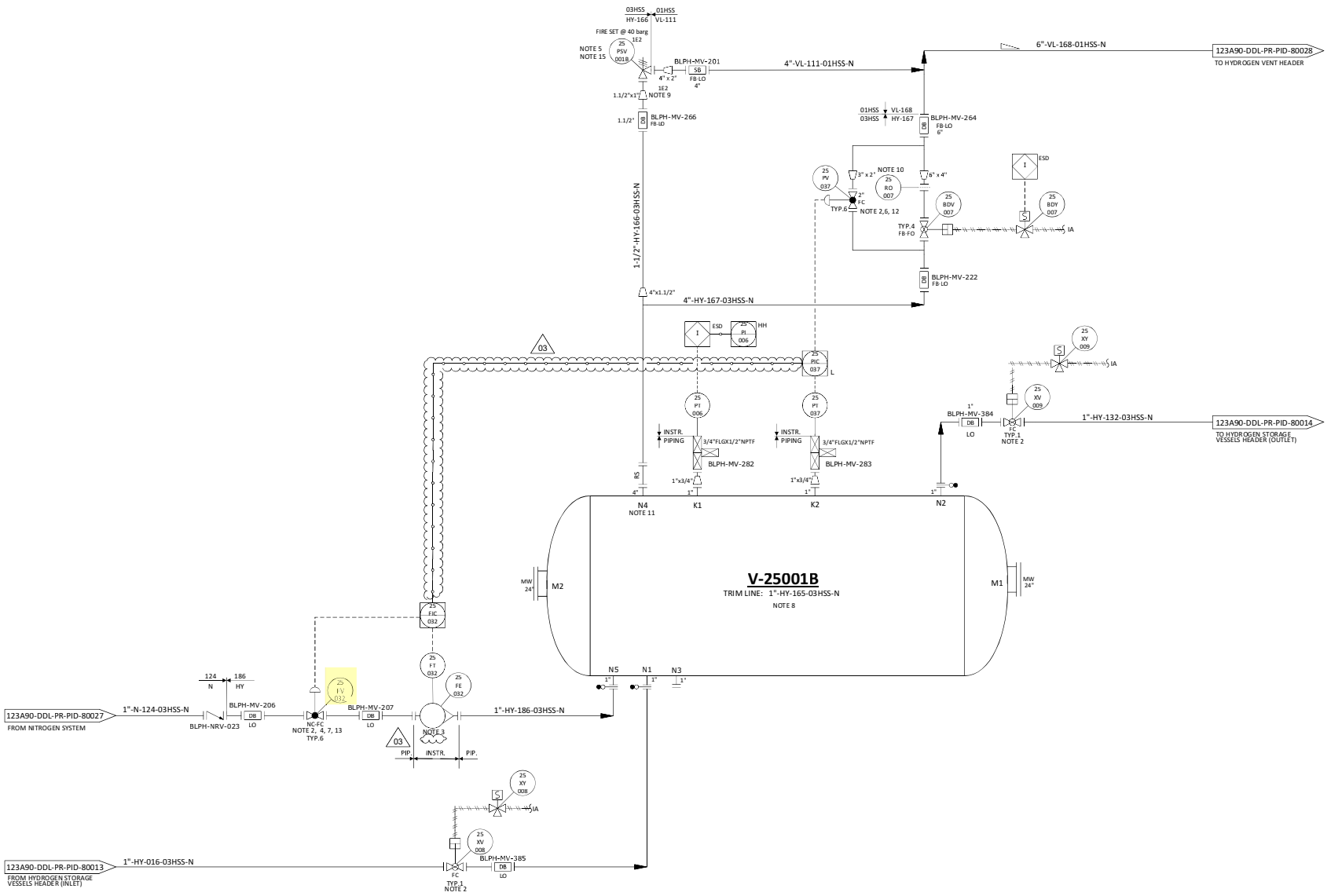
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_B

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-032) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-037 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC."PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-037 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-032 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-037 HAS FAILED TO CLOSE.
15. 25-PSV-001B SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL B

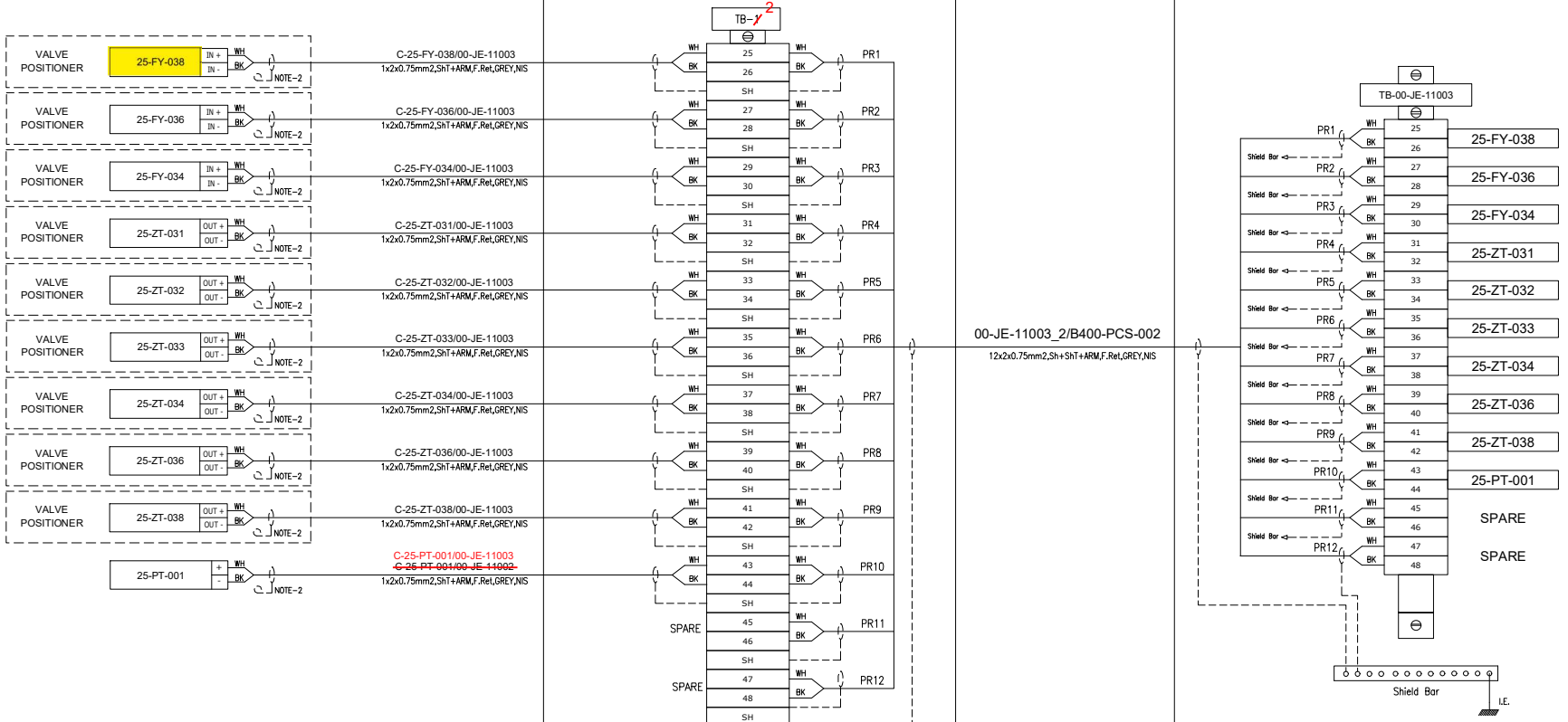
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80016	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11003	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

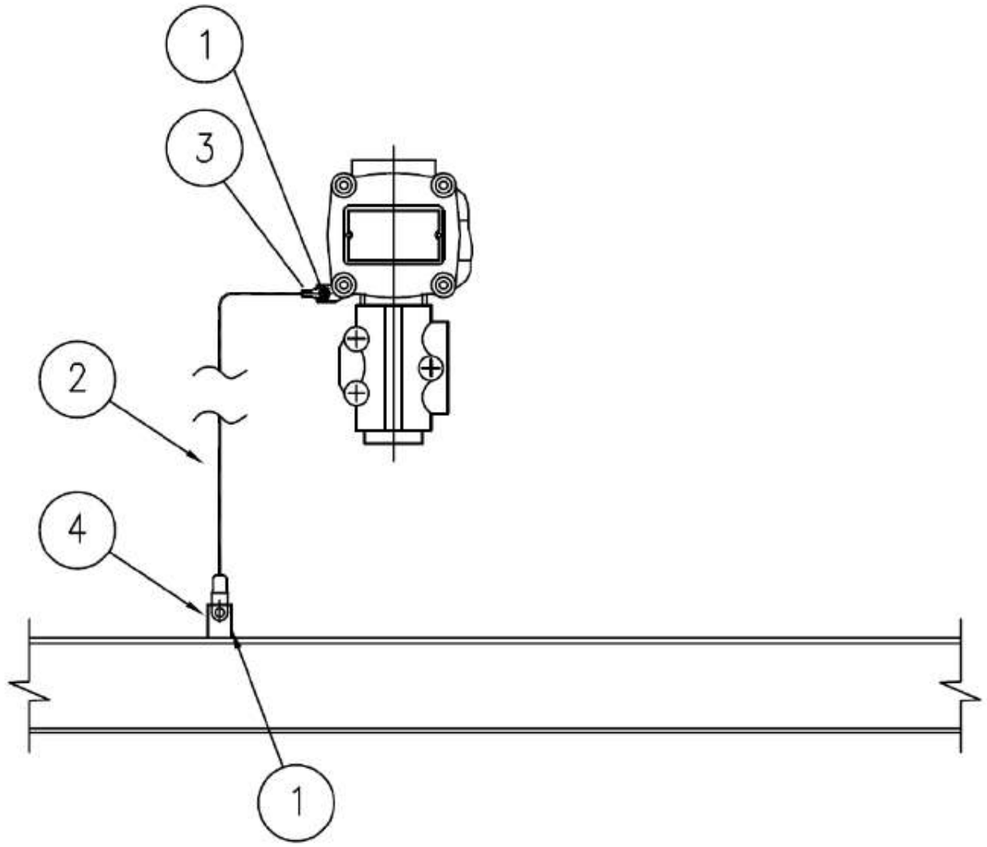
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11003–SH.2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123–A90–DDL–IN–40015	SHEET 008	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

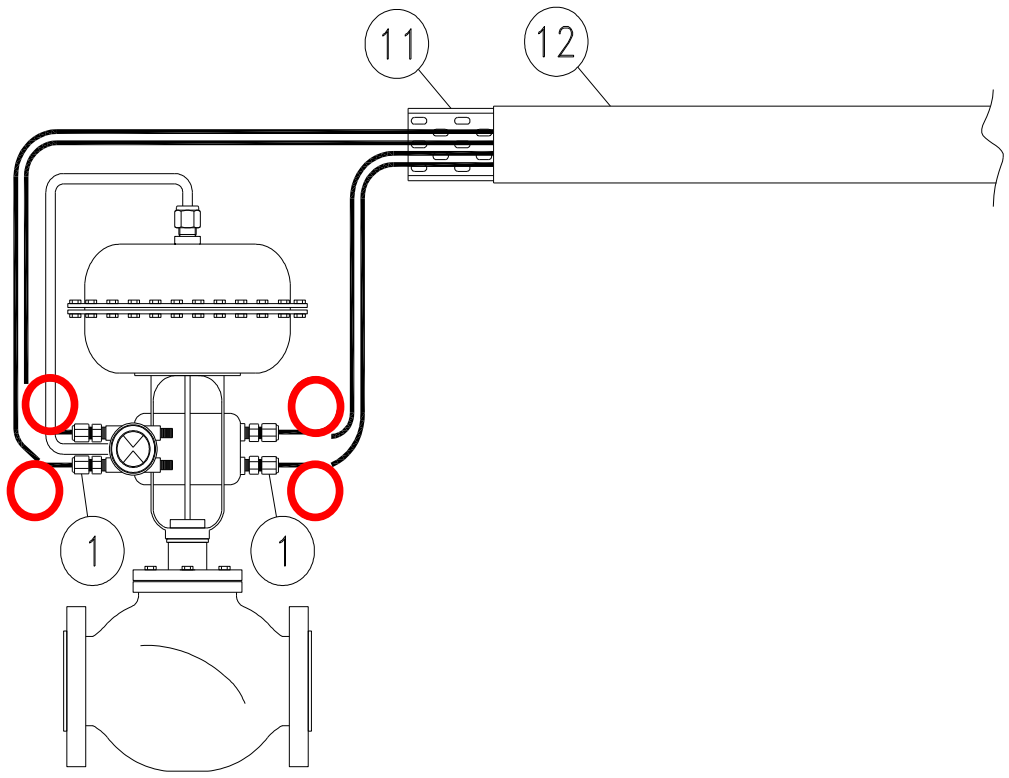
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
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NOTE:

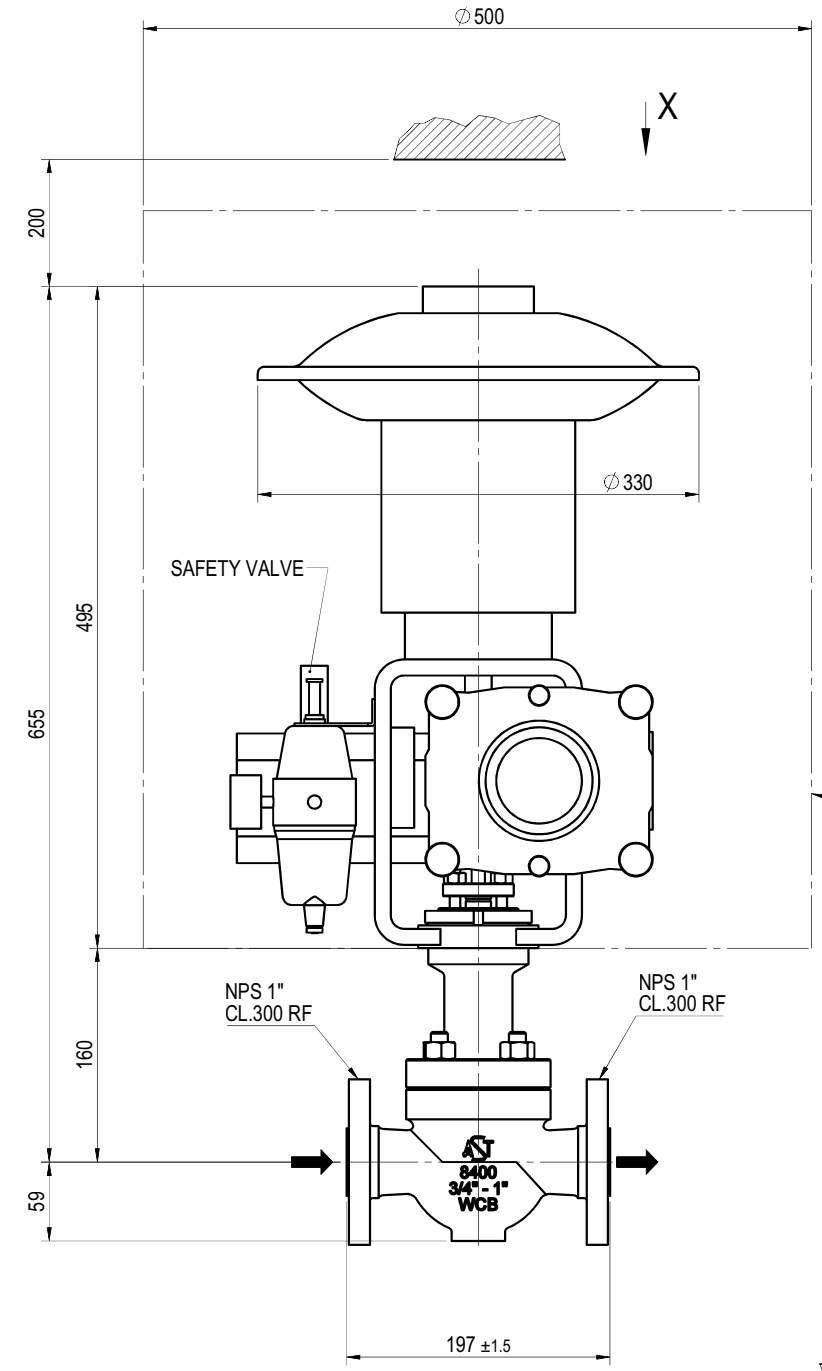
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

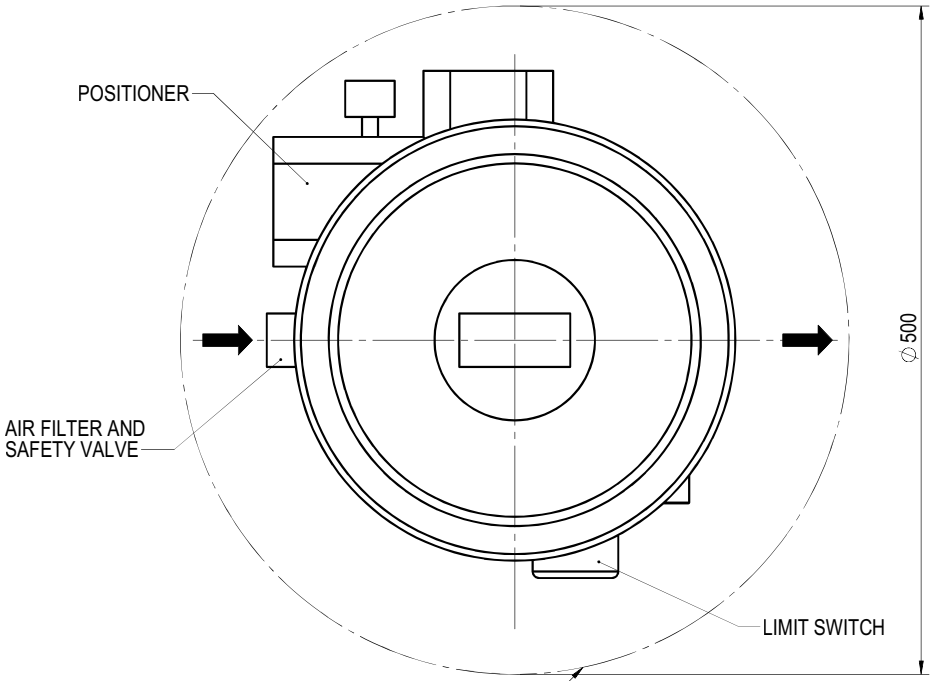
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy



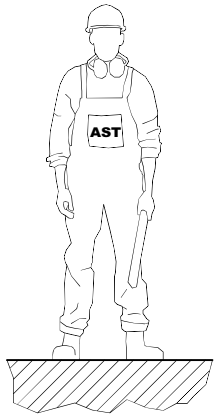
UPPER VIEW FROM "X"



MAXIMUM ACCESSORIES
OVERALL DIMENSION

POSITIONER ON BACK SIDE

MASS:
VALVE= ~ 12 kg
ACTUATOR= ~ 28 kg
TOTAL= ~ 40kg



General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-FV-031, 25-FV-032, 25-FV-033, 25-FV-034, 25-FV-036, 25-FV-038
Matricole / Serials	2400583, 2400584, 2400585, 2400586, 2400587, 2400588

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale

Mass kg

CR 00298

NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 1" PORT 1/4" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0100OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (MI) - Tel.02 934848.1 - Control valve division

GENERAL	1	Tag Number	P&ID Number			25-FV-038		123A90-DDL-PR-PID-80019	
	2	Service				NITROGEN FROM NITROGEN SYSTEM (U-64000) TO HYDROGEN STORAGE VESSEL (V-25001E)			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			1"-HY-189-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312 Gr.TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			NITROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 barg		100 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	17	Flow Rate (Gas)				Nm^3/h		40	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg		7	
	20	Pressure Drop				bar		max 7 - min 4	
	21	Inlet Temperature				°C		15	
	22	Inlet Density / Specific Gravity				kg/m^3		9.3	
	23	Inlet Compressibility Factor				-		0.99	
	24	Inlet Viscosity				cP		0.017	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-		1.4	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-		28	
CALCULATED RESULTS	28	Flow Coefficient Cv						0.3678 / 0.3846	
	29	Travel				75.6%			
	30	Sound Pressure Level				77.27 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HS03C02RFH)			
	33	Body Size	Trim Size			1"		1/4"	
	34	Rated Cv	Characteristics.			0.85		Equal% (11)	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 36L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				PTFE (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured (12, 13)			
	44	Rated Travel				13mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

						INSTRUMENT DATASHEET	CROSSWIND	
						Control Valve (Sheet 1 of 2)	ROSETTI MARINO	
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO			
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO		Sheet 14 of 37	
No.	Date	Description	By	Chkd	Appr	Code:	Dwg.No 123A90-DDL-IN-DS-40036	Rev. 01

Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598 - 1724000740-IN-DS-00007	Declaration of Conformity By AST_ATEX- SN °2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate - 1724000740-IN-DS-00007	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - II 2G Ex db IIC T5 / T6	Tissin EU - Type Examination Certificate - 1724000740-IN-DS-00007	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge_MBS6P4S2PN07-ATEX	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate - 1724000740-IN-DS-00007	Declaration of Conformity By Sitecna_FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03

(1) # EU - Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres – **Directive 2014/34/EU**

(3) EU - Type Examination Certificate Number

EPS 19 ATEX 1 112 X **Revision 1**

(4) Equipment: Smart Valve Positioner TS900*******, TS905*******

(5) Manufacturer: Tissin Co., Ltd

(6) Address: 201-1105, No 397, Seokcheon-ro
Ojeong-gu, Bucheon-Si, 14449
Korea

(7) This equipment and any acceptable variation thereto are specified in the annex to this certificate and the documentation therein referred to.

(8) Bureau Veritas Consumer Products Services Germany GmbH, notified body No. 2004 in accordance with Article 21 given in the Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014, certifies that this equipment has been found to comply with the essential health and safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive. The examination and test results are recorded in the confidential documentation under the reference number 19TH0274.

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-1:2014**

EN 60079-31:2014

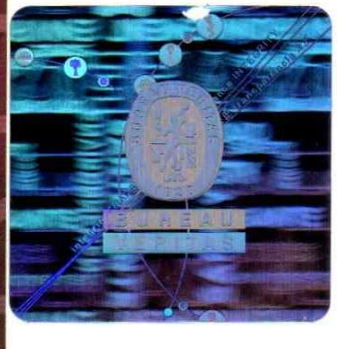
(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the annex to this certificate.

(11) This EU - Type Examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture of this equipment and its placing on the market. Those requirements are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2G Ex db IIC T5/T6 Gb

II 2G Ex tb IIIC T100°C/T85°C Db IP66



Certification department of explosion protection

Tuerkheim, 2022-06-14

Ulrich Feike

Certificates without signature and seal are void. This certificate is allowed to be distributed only if not modified. Extracts or modifications must be authorized by Bureau Veritas Consumer Products Services Germany GmbH.

(13) # Annex

(14) **EU - Type Examination Certificate EPS 19 ATEX 1 112 X** **Revision 1**

(15) Description of equipment:

Smart valve positioner controls the valve stroke in response to an input signal of 4~20mA DC from the control panel, DCS or calibrator. Smart valve positioner is composed of body and cover, made of aluminium alloy (TS900) or made of stainless steel (TS905). There is one flameproof compartment with electronic board, terminals inside.

Electrical data:

Alarm signal, Feedback signal: 9 ~ 30V DC

Input signal: 4 ~ 20mA.

(16) Reference number: 19TH0274

(17) Special conditions for safe use:

When installed in explosive gas atmosphere, separate cable gland with marking of Ex db IIC Gb in accordance with EN 60079-0:2018 and EN 60079-1:2014 shall be incorporated.

When installed in combustible dust atmosphere, separate cable gland with marking of Ex tb IIIC Db in accordance with EN 60079-0:2018 and EN 60079-31:2014 shall be incorporated.

Contact the original manufacturer for the information of flameproof joint dimension and fasteners(A2-70).

The relation between temperature class, ambient temperature and process medium temperature is following.

Temperature class		Ambient temperature
T6	T85 °C	(-40~+70) °C
T5	T100 °C	(-40~+80) °C

(18) Essential health and safety requirements:

Met by compliance with standards.

Certification department of explosion protection

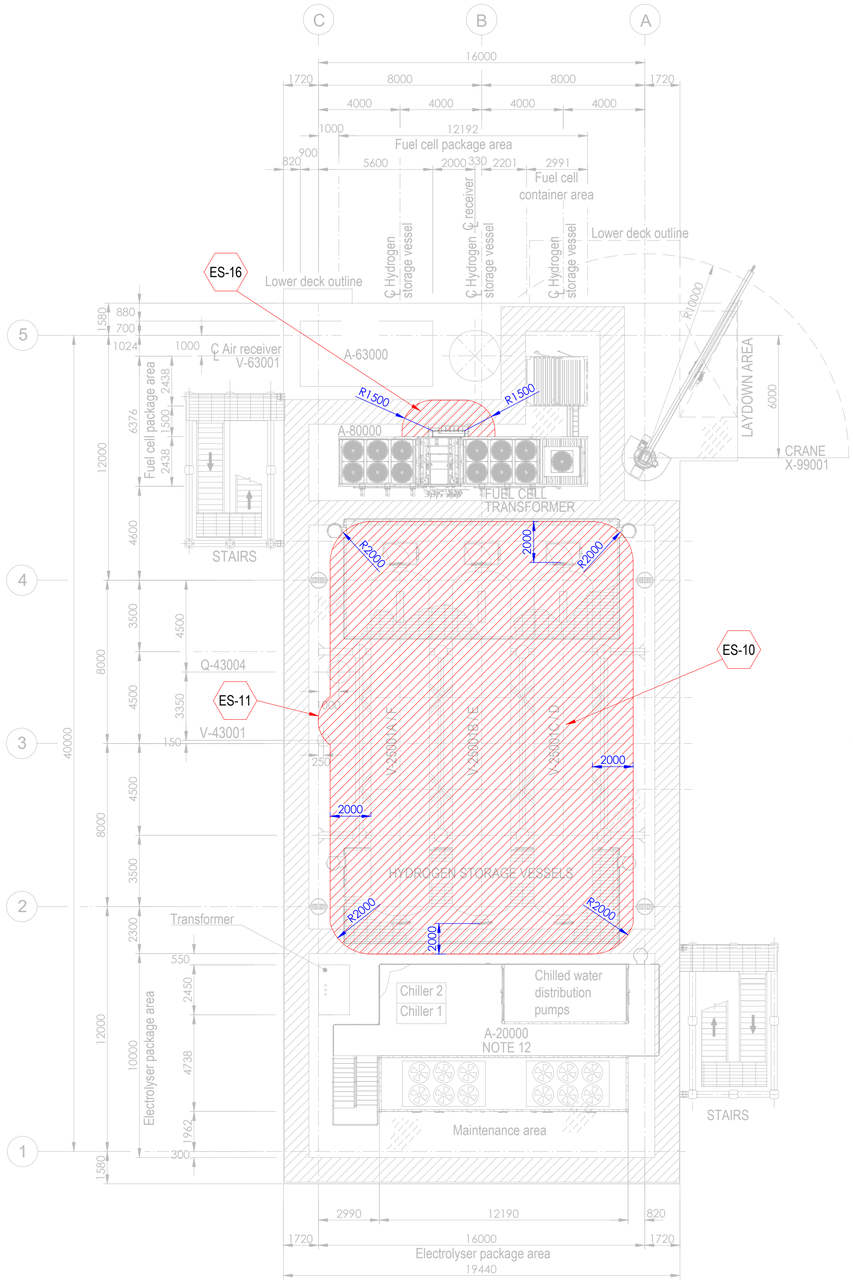
Ulrich Feike

Tuerkheim, 2022-06-14

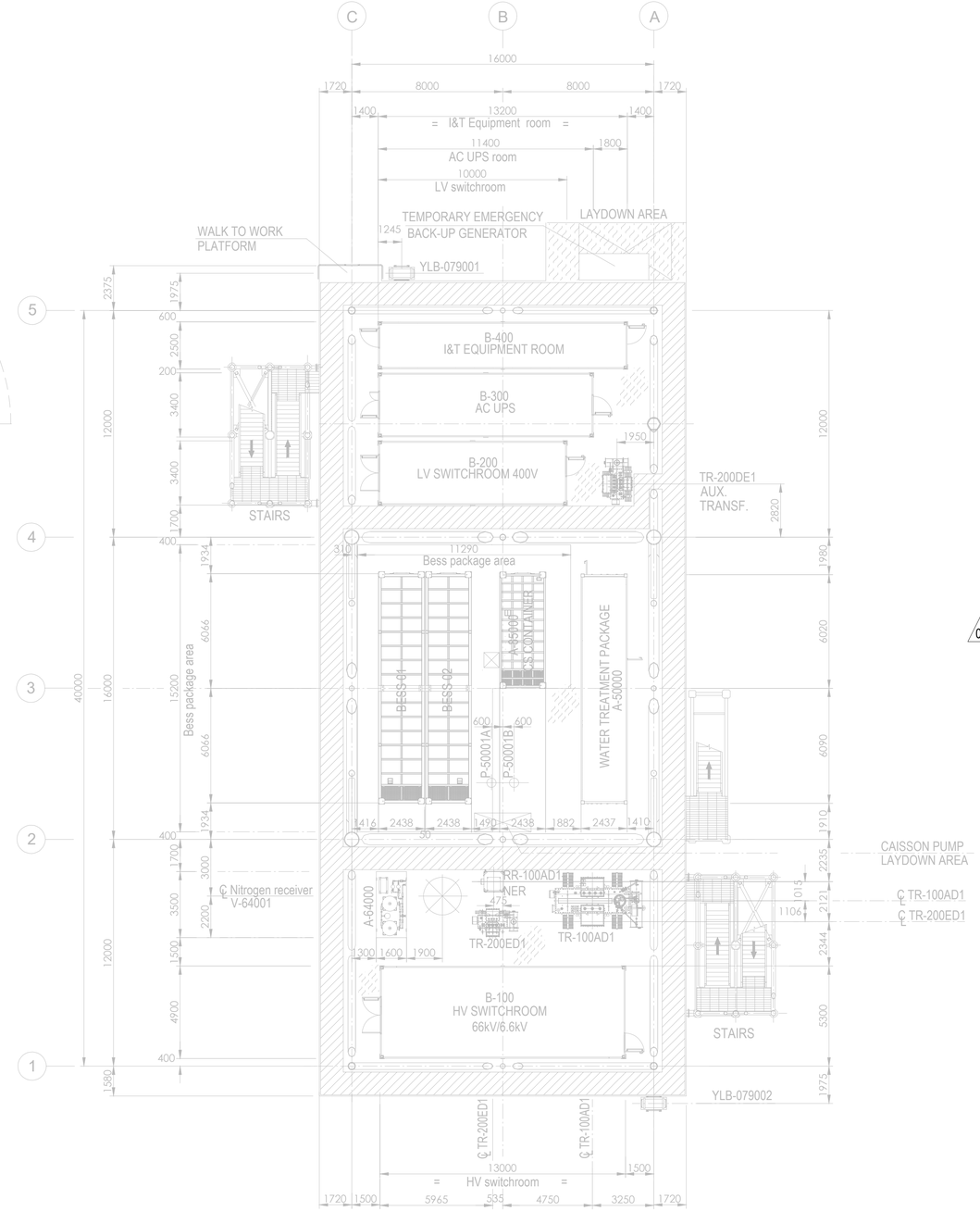
Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
00-JE-11001	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11002	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-11003	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-11004	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11005	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12001	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12002	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12003	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12004	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12005	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12006	PCS Digital Input JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13001	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13002	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-13003	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa		CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-21001	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87929	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-21002	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-22001	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87933	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-22002	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87934	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-23001	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-23002	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
25-BDV-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDV-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDV-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-BDY-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDY-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDY-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-FT-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FT-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-FT-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-FT-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FV-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FV-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FV-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FV-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FV-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FV-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FY-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407	II 2G	ATEX - SN 2400583	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FY-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407	II 2G	ATEX - SN 2400584	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FY-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407	II 2G	ATEX - SN 2400585	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FY-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407	II 2G	ATEX - SN 2400586	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FY-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407	II 2G	ATEX - SN 2400587	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FY-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407	II 2G	ATEX - SN 2400588	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-031	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



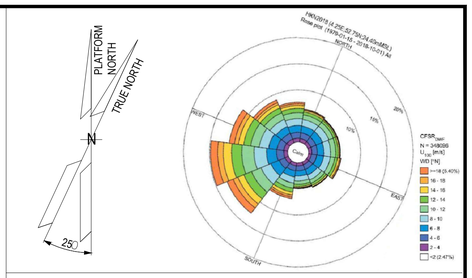
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

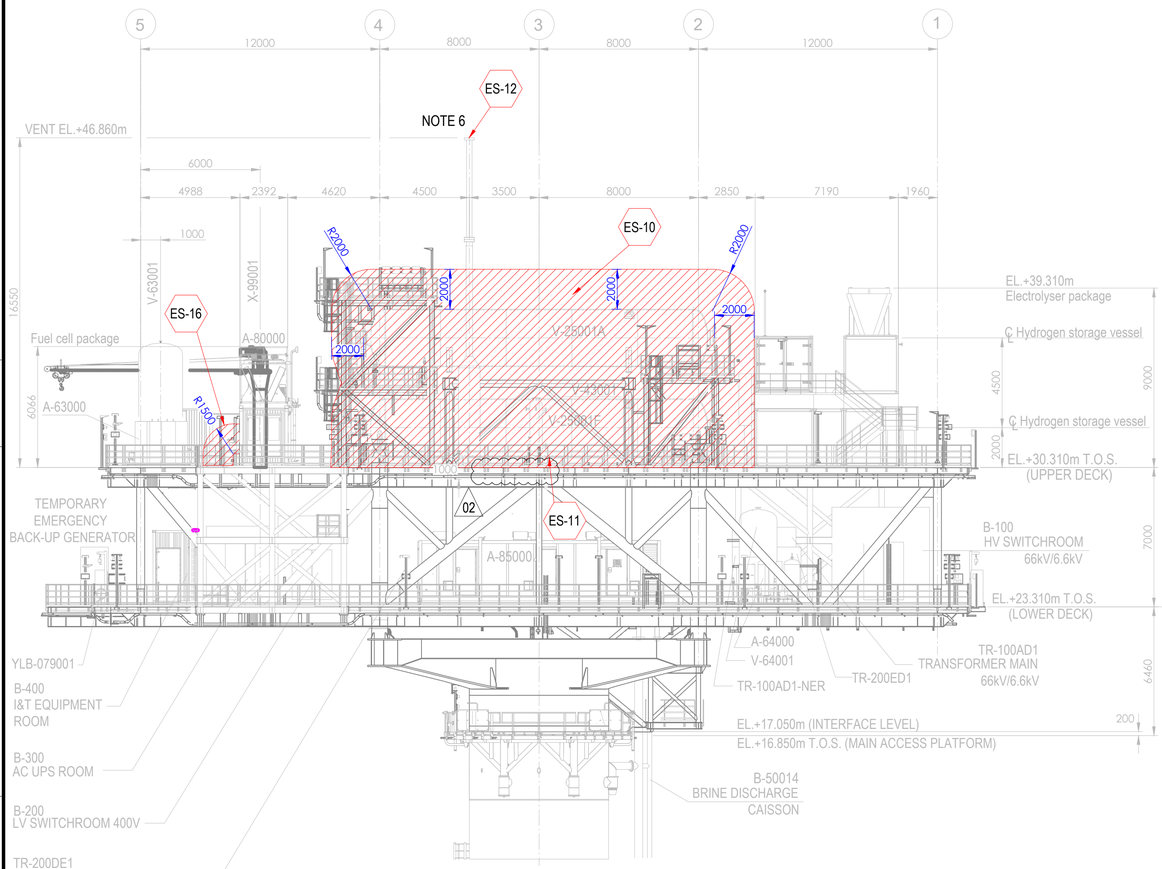
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

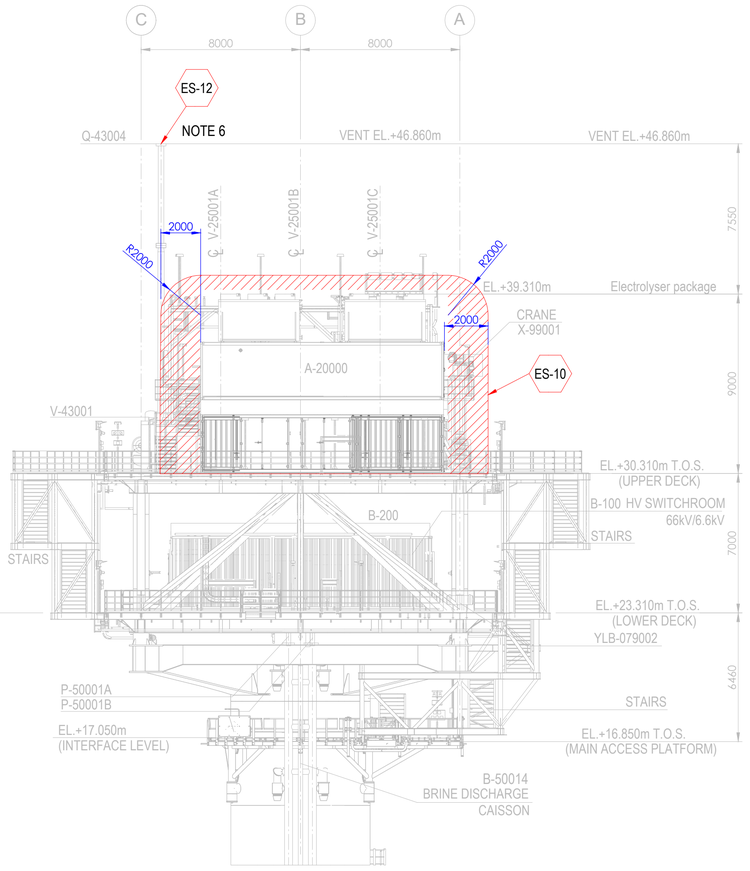
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

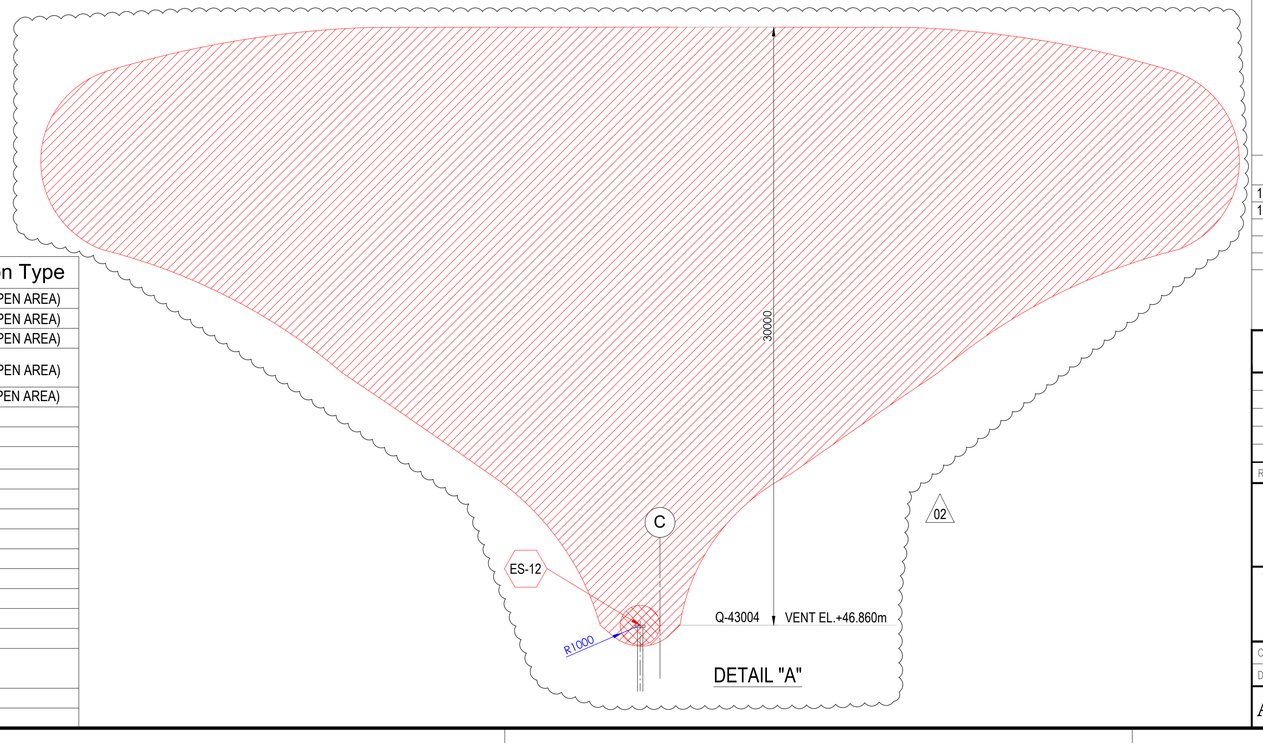


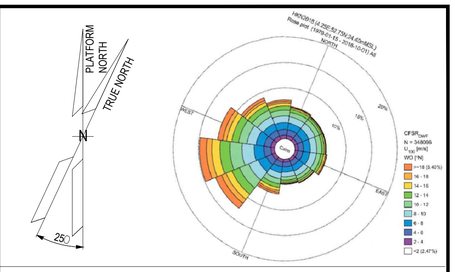
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PY-046	: Electropositioner - Vessel V-25001E Pressure Control	Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001708	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	24050885				
Manufacturer	TISSIN			**Model**	TS905LC41S30				
Cert No.	EPS 19 ATEX 1112X			**Equipment Ambient Temp.**	-40°C to +70°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	PL	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PY-046	: Electropositioner - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001708	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PY-046	: Electropositioner - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001708		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks					
67	All Terminals are Ex n certified (if required on certificate)	x	NA		
68	Hermetically sealed and enclosed break devices are undamaged	x	NA		
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA		
70	Test port, if fitted, is functional (type “nR” only)	x	NA		
71	Breathing operation is satisfactory (type “nR” only)	x	NA		
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA		
73	The ventilation airflow is not impeded	x	NA		
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA		
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA		
76	Variable voltage/frequency installation complies with documentation	x	NA		
Extra Ex p checks					
77	Pressurization gas is correct type	x	NA		
78	Actual pressure is within maximum and minimum settings for equipment	x	NA		
79	Timers set as per certification documentation	x	NA		
80	Alarms and trip functions operate correctly as per certification documentation	x	NA		
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA		
82	Automatic electrical protective devices operate within permitted limits	x	NA		
83	Automatic electrical protective devices are set correctly	x	NA		
84	Protective gas inlet temperature is below maximum specified	x	NA		
85	Ducts, pipes and enclosures are in good condition	x	NA		
86	Protective gas is substantially free from contaminants	x	NA		
87	Protective gas pressure and/or flow is adequate	x	NA		
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA		
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA		
90	Specific conditions of use (if applicable) are complied with		NA		
Extra Ex i (Intrinsically Safe – IS) checks					
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA		
92	Cables are installed in accordance with the documentation	x	NA		
93	Segregation is maintained between IS and non-IS Circuits	x	NA		
94	Cable screens are isolated at one end (field side)	x	NA		
95	Cable screens are earthed in accordance with the documentation	x	NA		
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA		
97	Equipment installed is the one specified in the documentation	x	NA		
98	Ambient temperature range of the apparatus is correct for the installation	x	NA		
99	Service temperature range of the apparatus is correct for the installation	x	NA		
100	Installation is clearly labelled	x	NA		
101	Printed circuit boards are clean and undamaged	x	NA		
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA		
103	Point-to-point connections are all correct	x	NA		
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA		
105	Earth connections maintain the integrity of the type of protection	x	NA		
106	Intrinsically safe circuit earthing is satisfactory	x	NA		
107	Insulation resistance is satisfactory	x	NA		
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA		

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

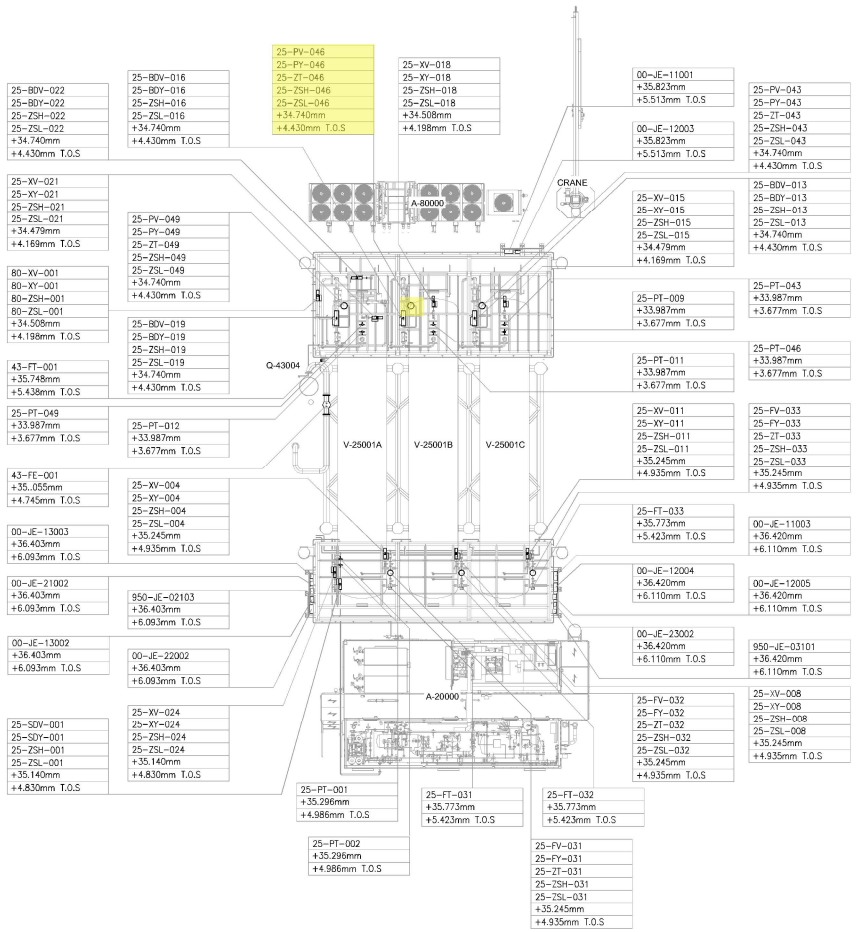
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-14	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-14T10:07:14.311Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T15:37:51.408Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

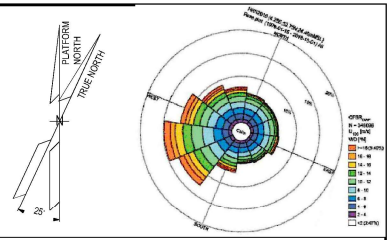
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

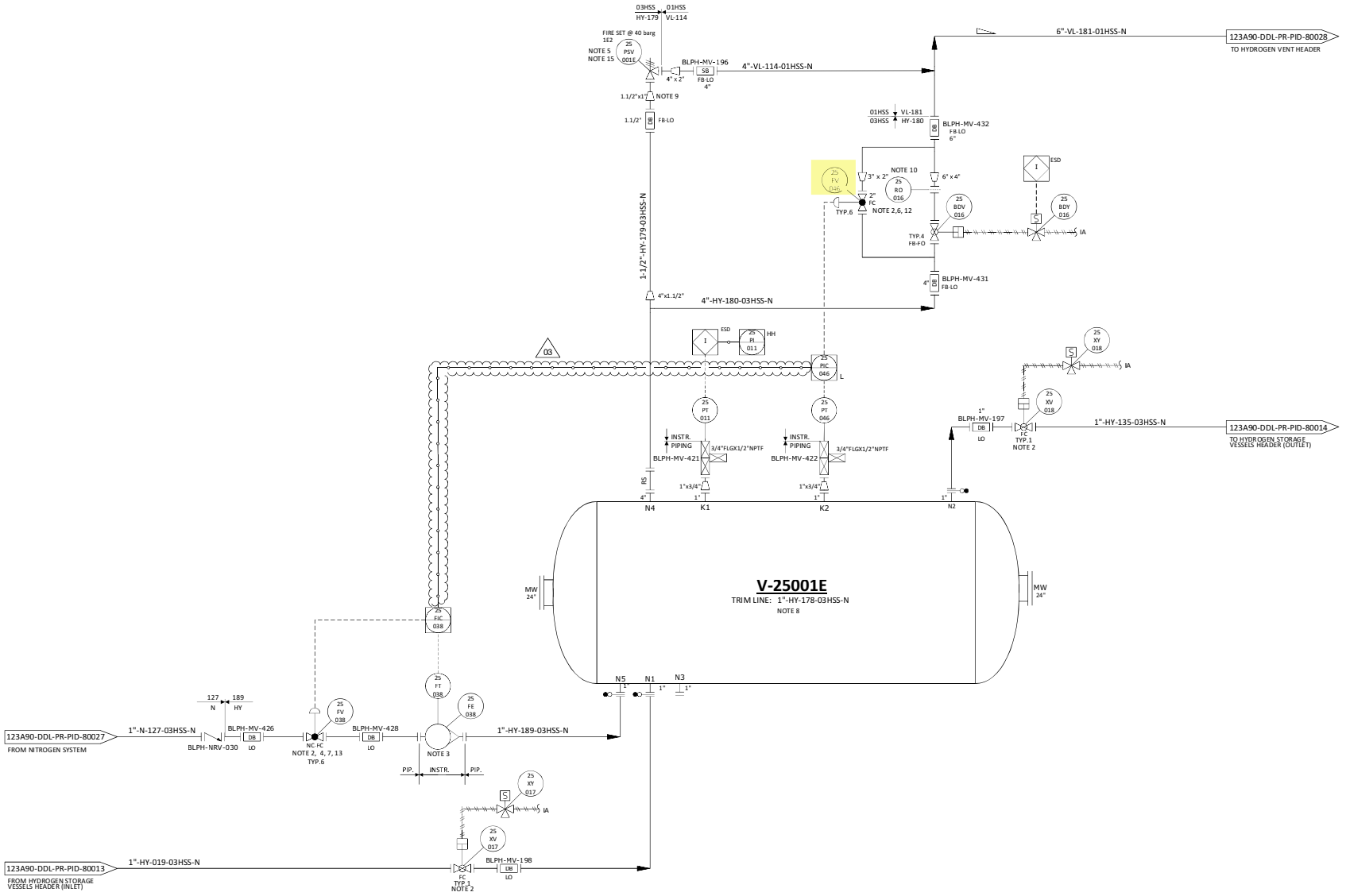
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11001	No.	MARSHALLING CABINET B400-PCS-002

<01>

INSTRUMENT				JUNCTION BOX 00-JE-11001			MULTICABLE No.	MARSHALLING CABINET B400-PCS-002	
VALVE POSITIONER	25-PY-046	IN + / IN -	C-25-PY-046/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	TB-2 25	PR1			25-PY-046	
VALVE POSITIONER	25-PY-049	IN + / IN -	C-25-PY-049/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	26 SH 27	PR2			25-PY-049	
VALVE POSITIONER	25-ZT-035	OUT + / OUT -	C-25-ZT-035/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	28 SH 29	PR3			25-ZT-035	
VALVE POSITIONER	25-ZT-037	OUT + / OUT -	C-25-ZT-037/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	30 SH 31	PR4			25-ZT-037	
VALVE POSITIONER	25-ZT-040	OUT + / OUT -	C-25-ZT-040/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	32 SH 33	PR5			25-ZT-040	
VALVE POSITIONER	25-ZT-043	OUT + / OUT -	C-25-ZT-043/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	34 SH 35	PR6		00-JE-11001_2/B400-PCS-002 12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS	25-ZT-043	
VALVE POSITIONER	25-ZT-046	OUT + / OUT -	C-25-ZT-046/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	36 SH 37	PR7			25-ZT-046	
VALVE POSITIONER	25-ZT-049	OUT + / OUT -	C-25-ZT-049/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	38 SH 39	PR8			25-ZT-049	
				40 SH SPARE 41	PR9			SPARE	
				42 SH SPARE 43	PR10			SPARE	
				44 SH SPARE 45	PR11			SPARE	
				46 SH SPARE 47	PR12			SPARE	
				48 SH OS					

NOTE-2

TB-00-JE-11001

Shield Bar

I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

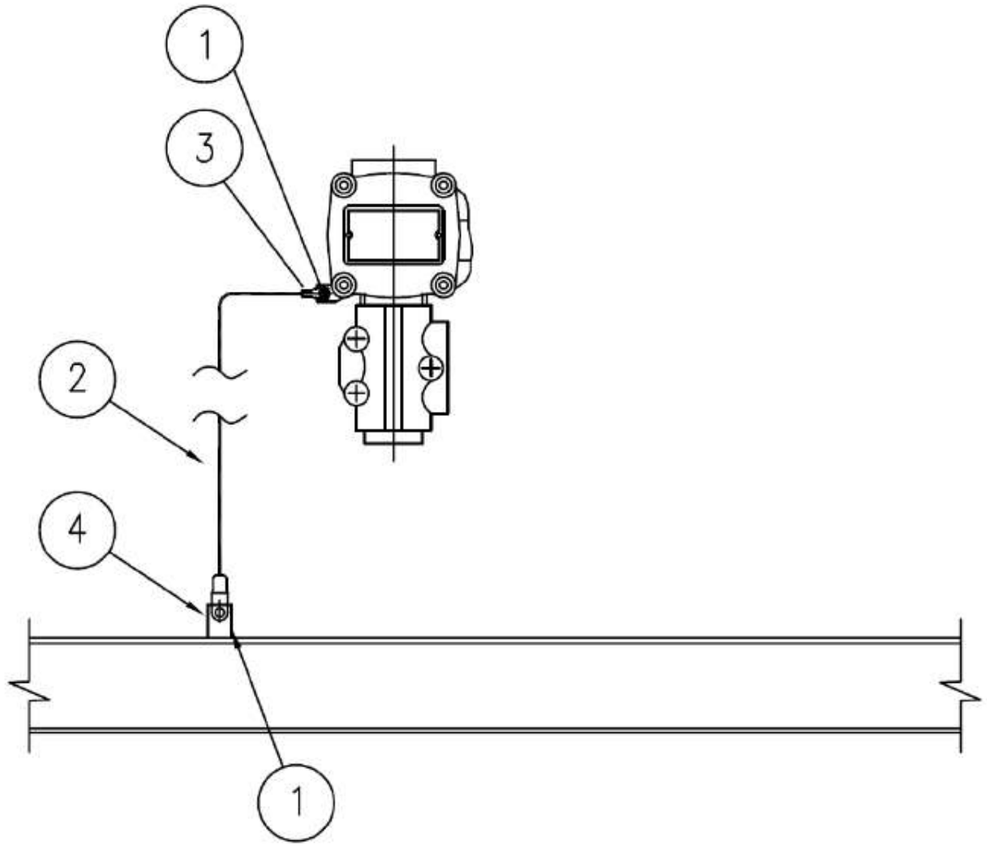
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11001–SH. 2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123–A90–DDL–IN–40015	SHEET 005	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DD-20090
REV.: 2_I | DATE: 07/11/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

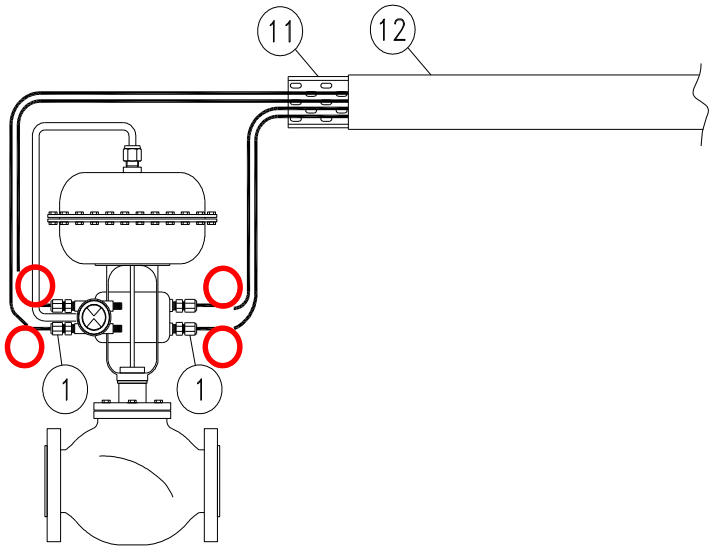
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
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30	

NOTE:

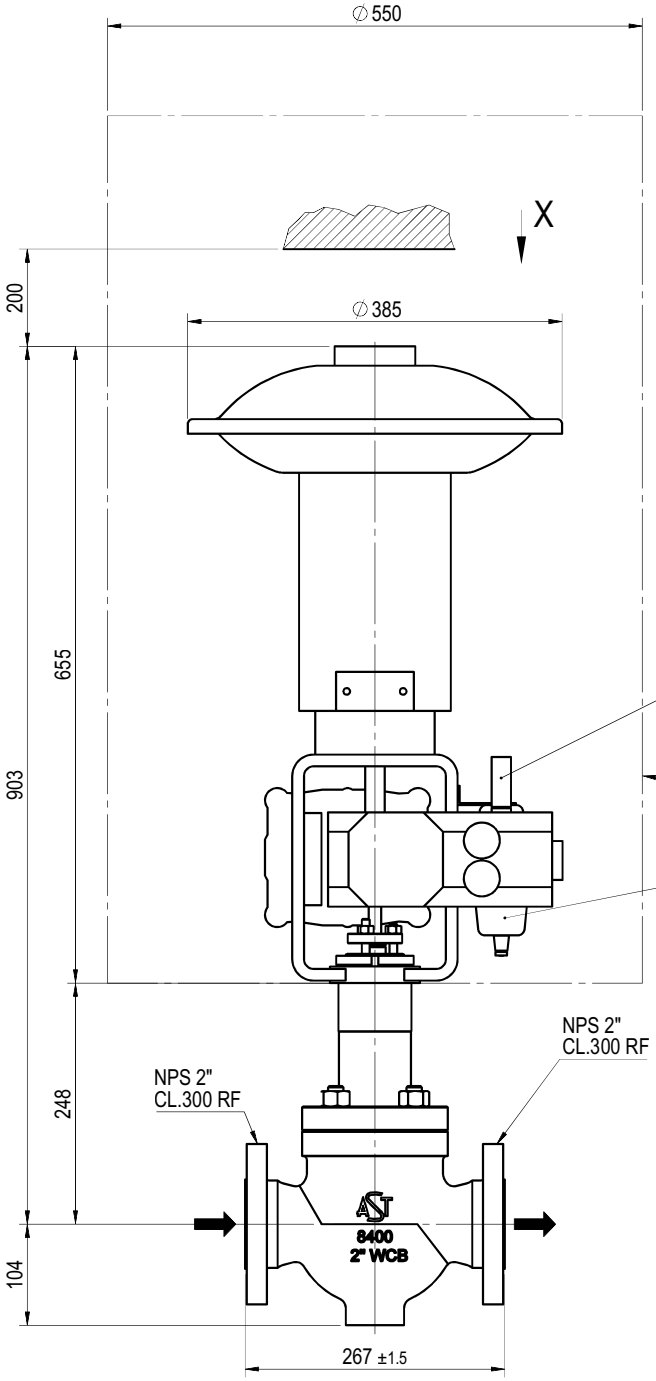
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

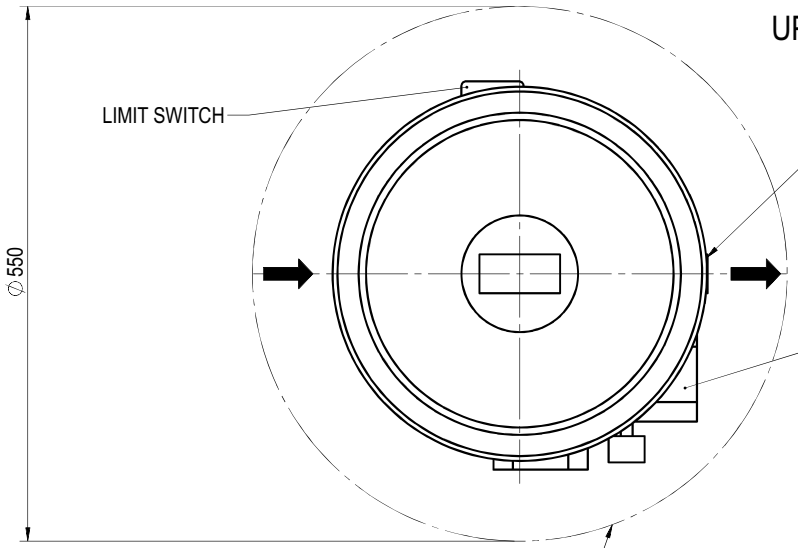
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

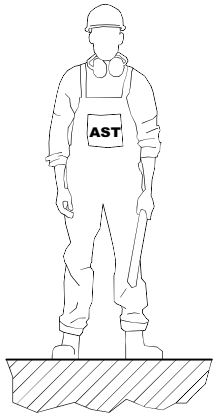
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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POSITIONER ON FRONT SIDE

MASS:
VALVE= ~ 30 kg
ACTUATOR= ~ 45 kg
TOTAL= ~ 75 kg

General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-PV-035, 25-PV-037, 25-PV-040, 25-PV-043, 25-PV-046, 25-PV-049
Matricole / Serials	2400589, 2400590, 2400591, 2400592, 2400593, 2400594

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale | Mass kg | CR 00299 | NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 2" PORT 1" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0200OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (Mi) - Tel.02 934848.1 - Control valve division

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PSV-055B	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03803	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PT-001	Hyrogen to vessels inlet header	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240634	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-002	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240635	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-004	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240636	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PT-006	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240638	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-PT-008	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240640	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-PT-009	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240642	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PT-011	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240644	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_2
25-PT-012	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240646	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-035	Vessel V-25001A pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240637	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PT-037	Vessel V-25001B pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240639	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-PT-040	Vessel V-25001C pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240641	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-PT-043	Vessel V-25001D pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240643	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PT-046	Vessel V-25001E pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240645	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_2
25-PT-049	Vessel V-25001F pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240647	SST76-H-7-L-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PT-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240648	SST76-H-7-K-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PT-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240649	SST76-H-7-K-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PV-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400589	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PV-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400590	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PV-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400591	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PV-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400592	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PV-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400593	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PV-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400594	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PV-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400595	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PV-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400596	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PY-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400589	CV-8407	II 2G	ATEX - SN 2400589	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PY-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400590	CV-8407	II 2G	ATEX - SN 2400590	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PY-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400591	CV-8407	II 2G	ATEX - SN 2400591	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PY-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400592	CV-8407	II 2G	ATEX - SN 2400592	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PY-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400593	CV-8407	II 2G	ATEX - SN 2400593	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PY-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400594	CV-8407	II 2G	ATEX - SN 2400594	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PY-055A	Hydrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400595	CV-8407	II 2G	ATEX - SN 2400595	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PY-055B	Hydrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	AST SpA	2400596	CV-8407	II 2G	ATEX - SN 2400596	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SDV-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SDV-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SDY-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SDY-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-SV-031	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-SV-032	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-SV-033	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-SV-034	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-SV-035	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-SV-036	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-SV-037	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

(1) # EU - Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres – **Directive 2014/34/EU**

(3) EU - Type Examination Certificate Number

EPS 19 ATEX 1 112 X **Revision 1**

(4) Equipment: Smart Valve Positioner TS900*******, TS905*******

(5) Manufacturer: Tissin Co., Ltd

(6) Address: 201-1105, No 397, Seokcheon-ro
Ojeong-gu, Bucheon-Si, 14449
Korea

(7) This equipment and any acceptable variation thereto are specified in the annex to this certificate and the documentation therein referred to.

(8) Bureau Veritas Consumer Products Services Germany GmbH, notified body No. 2004 in accordance with Article 21 given in the Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014, certifies that this equipment has been found to comply with the essential health and safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive. The examination and test results are recorded in the confidential documentation under the reference number 19TH0274.

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-1:2014**

EN 60079-31:2014

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the annex to this certificate.

(11) This EU - Type Examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture of this equipment and its placing on the market. Those requirements are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2G Ex db IIC T5/T6 Gb

II 2G Ex tb IIIC T100°C/T85°C Db IP66



Certification department of explosion protection

Tuerkheim, 2022-06-14

Ulrich Feike

ZERTIFIZIERUNGSSTELLE BUREAU VERITAS Bureau Veritas CPS Germany GmbH 1828

Certificates without signature and seal are void. This certificate is allowed to be distributed only if not modified. Extracts or modifications must be authorized by Bureau Veritas Consumer Products Services Germany GmbH.

(13) # Annex

(14) **EU - Type Examination Certificate EPS 19 ATEX 1 112 X** **Revision 1**

(15) Description of equipment:

Smart valve positioner controls the valve stroke in response to an input signal of 4~20mA DC from the control panel, DCS or calibrator. Smart valve positioner is composed of body and cover, made of aluminium alloy (TS900) or made of stainless steel (TS905). There is one flameproof compartment with electronic board, terminals inside.

Electrical data:

Alarm signal, Feedback signal: 9 ~ 30V DC

Input signal: 4 ~ 20mA.

(16) Reference number: 19TH0274

(17) Special conditions for safe use:

When installed in explosive gas atmosphere, separate cable gland with marking of Ex db IIC Gb in accordance with EN 60079-0:2018 and EN 60079-1:2014 shall be incorporated.

When installed in combustible dust atmosphere, separate cable gland with marking of Ex tb IIIC Db in accordance with EN 60079-0:2018 and EN 60079-31:2014 shall be incorporated.

Contact the original manufacturer for the information of flameproof joint dimension and fasteners(A2-70).

The relation between temperature class, ambient temperature and process medium temperature is following.

Temperature class		Ambient temperature
T6	T85 °C	(-40~+70) °C
T5	T100 °C	(-40~+80) °C

(18) Essential health and safety requirements:

Met by compliance with standards.

Certification department of explosion protection

Ulrich Feike

Tuerkheim, 2022-06-14

GENERAL	1	Tag Number	P&ID Number			25-PV-046		123A90-DDL-PR-PID-80019	
	2	Service				HYDROGEN FROM STORAGE VESSEL (V-25001E) TO HYDROGEN VENT HEADER			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			3"-HY-180-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		3" / 3.05 mm		3" / 3.05 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312/TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			HYDROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 Barg		80 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	N2	H2	
	17	Flow Rate (Gas)				Nm^3/h	40	500	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg	min 1 - max 4	min 1 - max 4	
	20	Pressure Drop				bar	0.7	0.7	
	21	Inlet Temperature				°C	AMB	AMB	
	22	Inlet Density / Specific Gravity				kg/m^3	2.3 - 5.8	0.16 - 0.41	
	23	Inlet Compressibility Factor				-	1	1	
	24	Inlet Viscosity				cP	0.01	0,01	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-	1.3	1.3	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-	28	2	
CALCULATED RESULTS	28	Flow Coefficient Cv					1.719 / 0.9689	5.772 / 3.241	
	29	Travel				80.8%			
	30	Sound Pressure Level				83.01 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HT03C02RFH)			
	33	Body Size	Trim Size			2"		1"	
	34	Rated Cv	Characteristics.			13		(11) Equal%	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				ASTM A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 316L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				Grafite - VF1 (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured Plug (12, 13)			
	44	Rated Travel				25mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

						INSTRUMENT DATASHEET	CROSSWIND	
						Control Valve (Sheet 1 of 2)	ROSETTI MARINO	
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO		Sheet 26 of 37	
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO			
No.	Date	Description	By	Chkd	Appr	Code:	Dwg.No 123A90-DDL-IN-DS-40036	Rev. 01

ACTUATOR	50	MFR	Model	AST	SD13R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		20-44 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	Magnetic	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.
(2) Hydrogen service - Packing ISO 15848-1

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

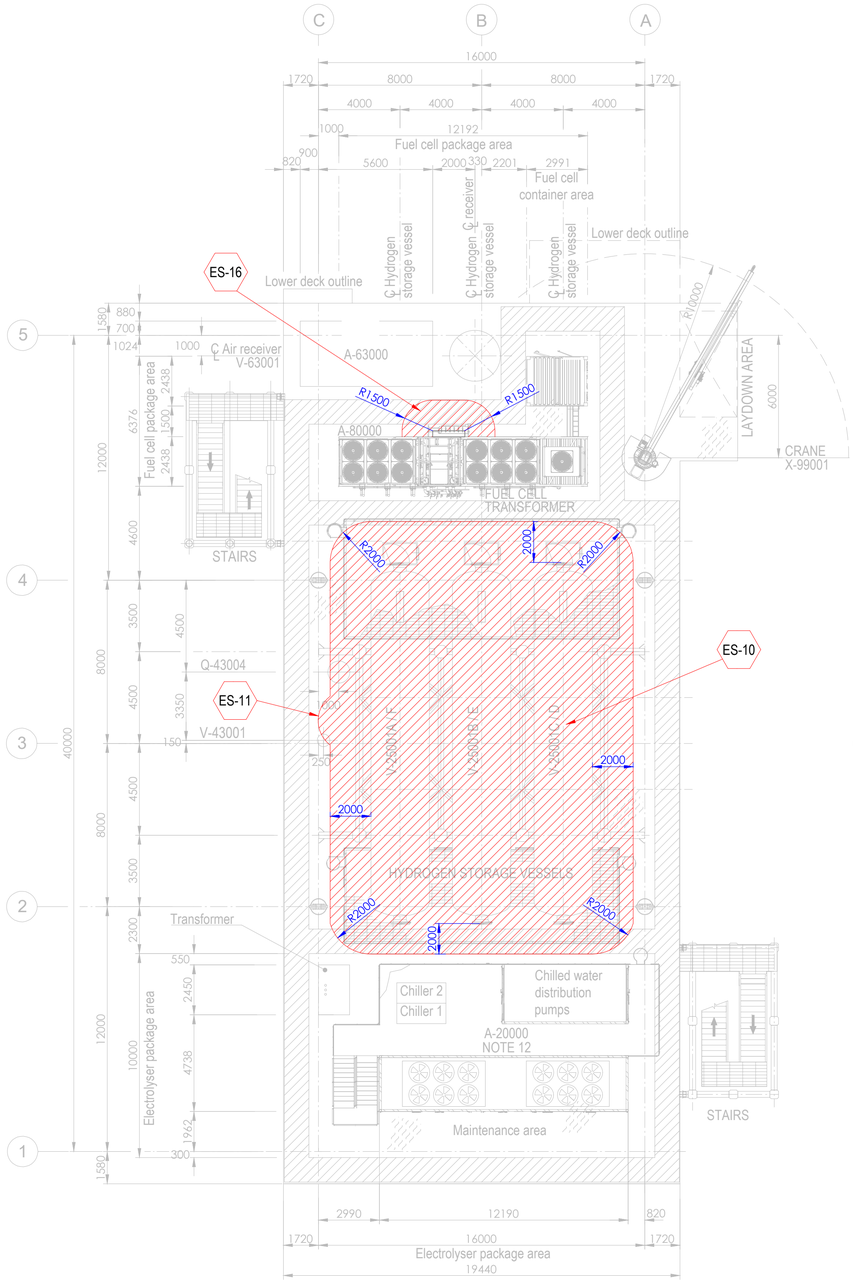
ROSETTI MARINO

Sheet 27 of 37

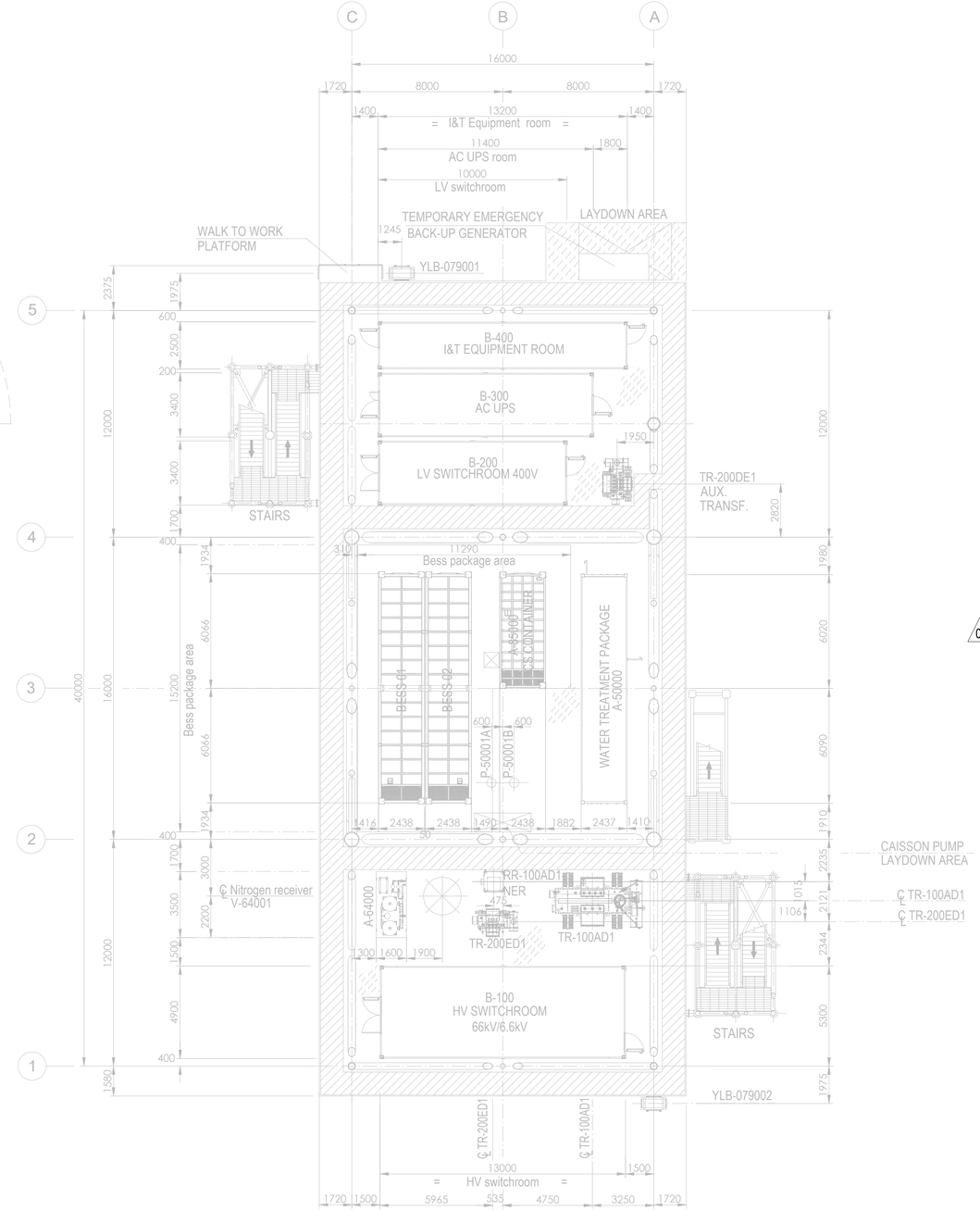
Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



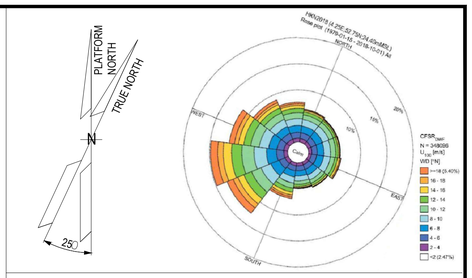
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

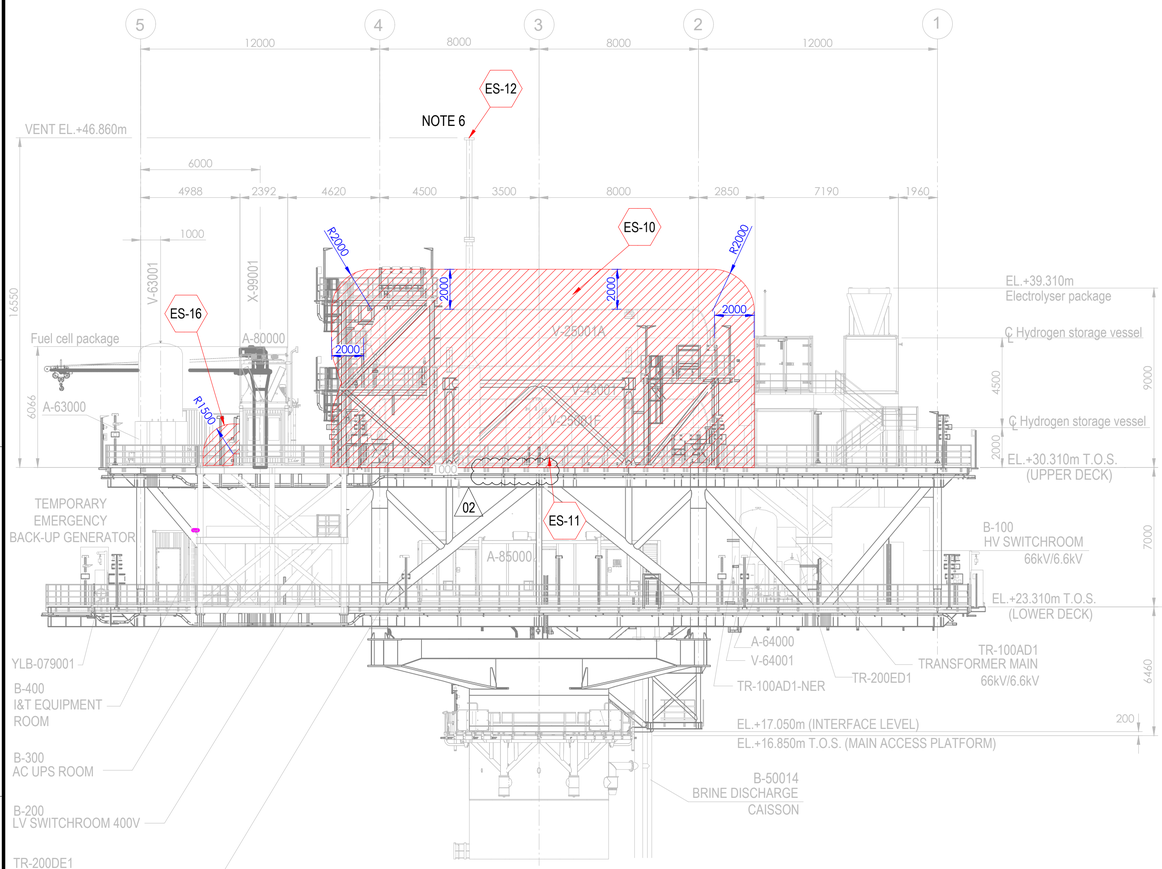
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

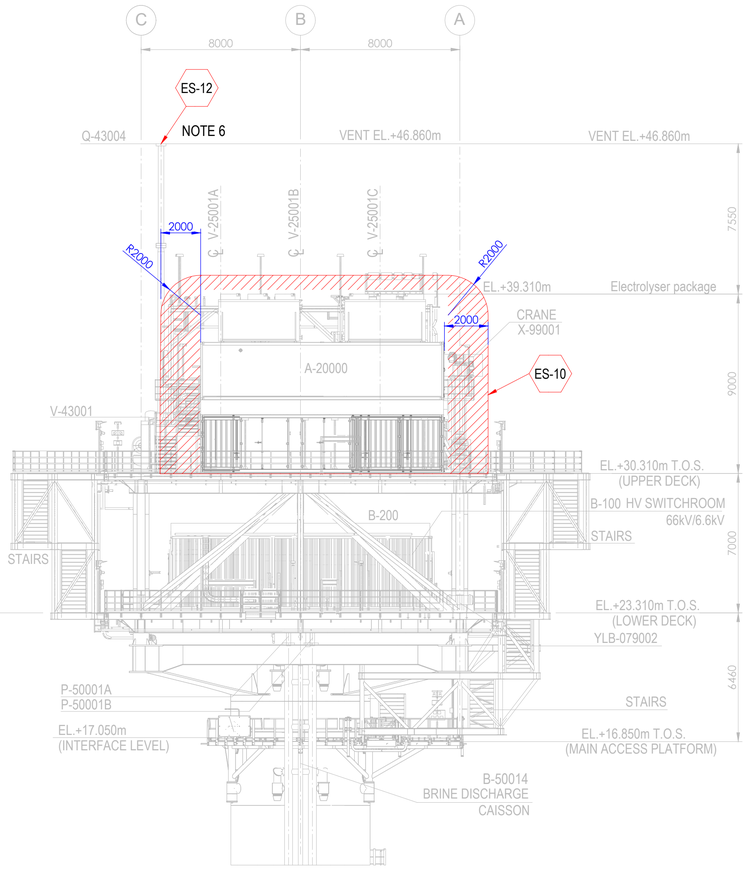
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

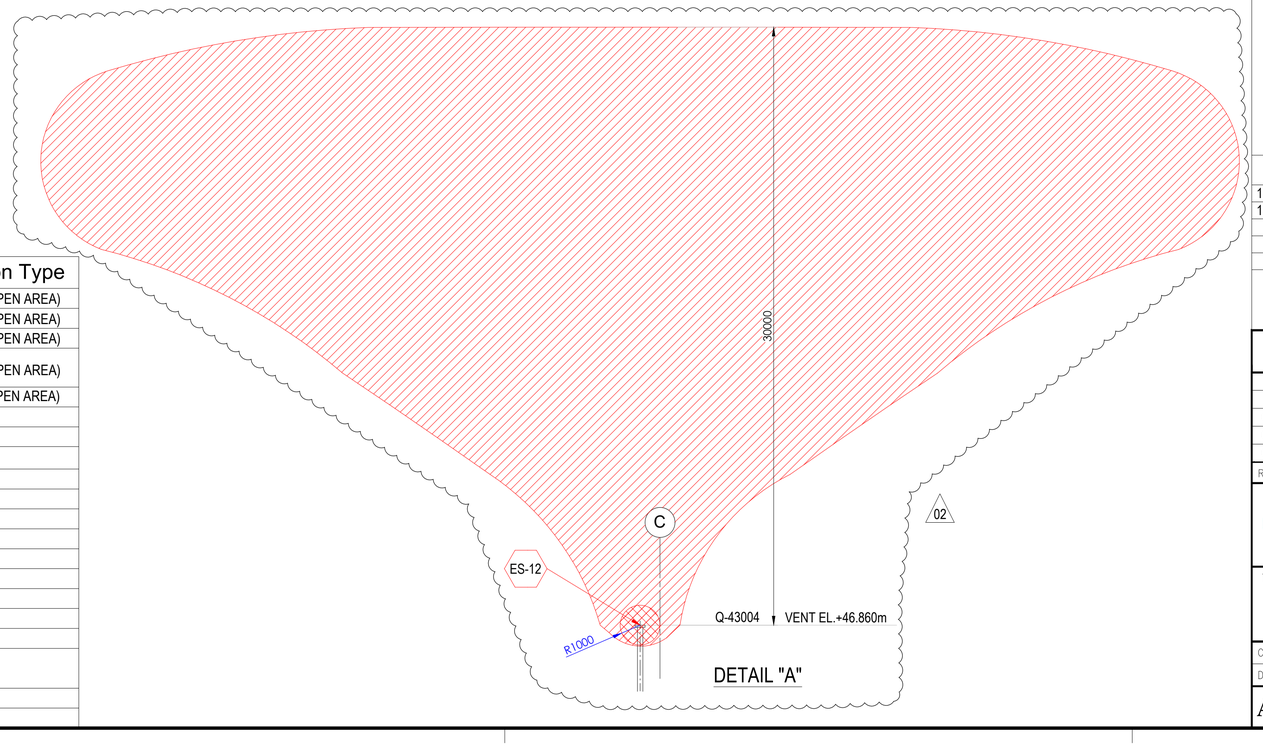


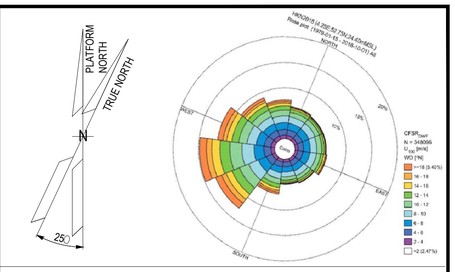
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-ZSHL-038	: Open/closed Limit Switches - Nitrogen to V-25001E Vessel	Dwg	123A90-DDL-PR-PID-80016		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10001747	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		Batch n° :44219			
Manufacturer	EISENBAU			**Model**		GDSN0LIS2MS290			
Cert No.	FIDI 20 ATEX 0039X			**Equipment Ambient Temp.**		-25°C to +85°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T5	**IP Rating**	IP66/68

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	PL	
13	Condition of enclosure gaskets is satisfactory	x	PL	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	OK	

ITEM	Tag	25-ZSHL-038	: Open/closed Limit Switches - Nitrogen to V-25001E Vessel			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001747	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		OK	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-ZSHL-038	: Open/closed Limit Switches - Nitrogen to V-25001E Vessel			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001747	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline ATEX	Form CJX01		Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

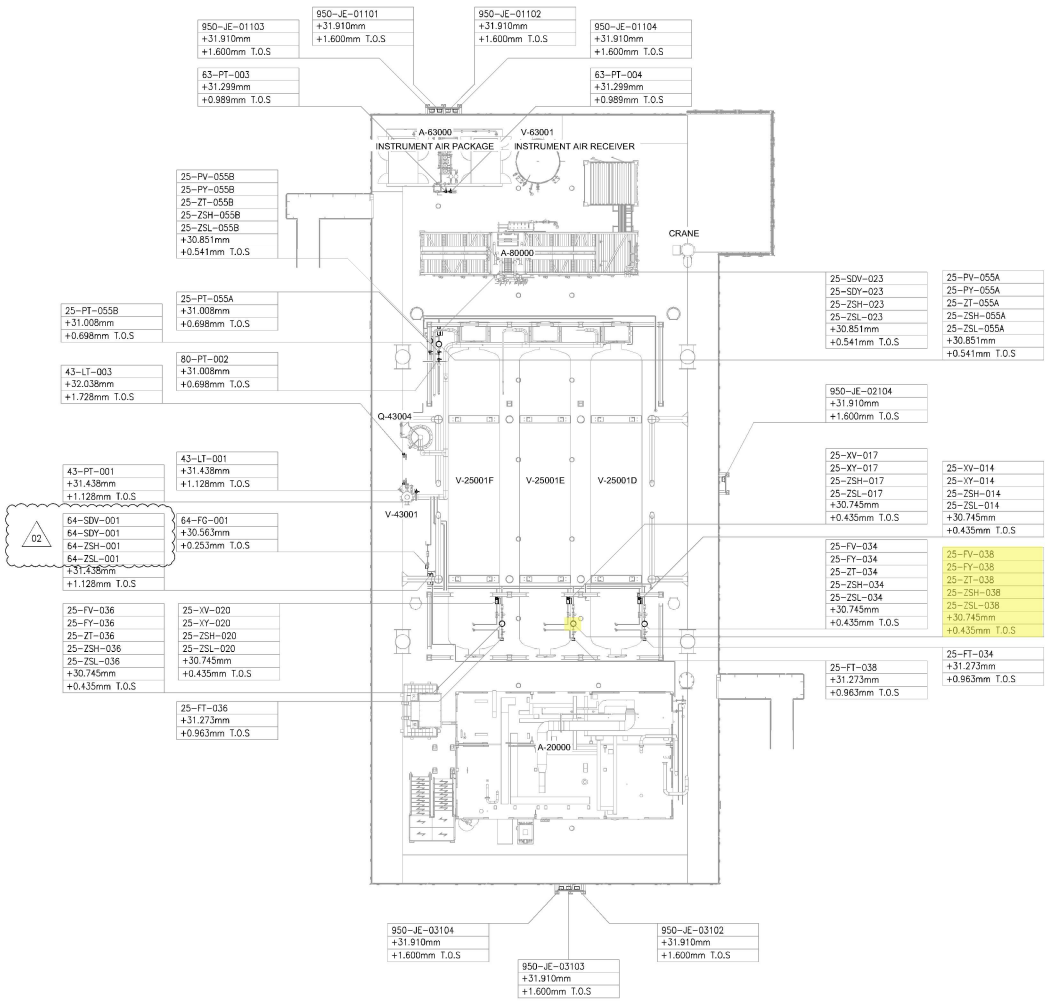
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-25	2025-01-27	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-25T13:54:35.254Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-27T10:59:56.118Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

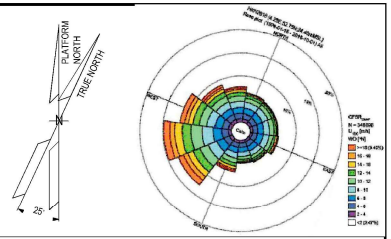
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

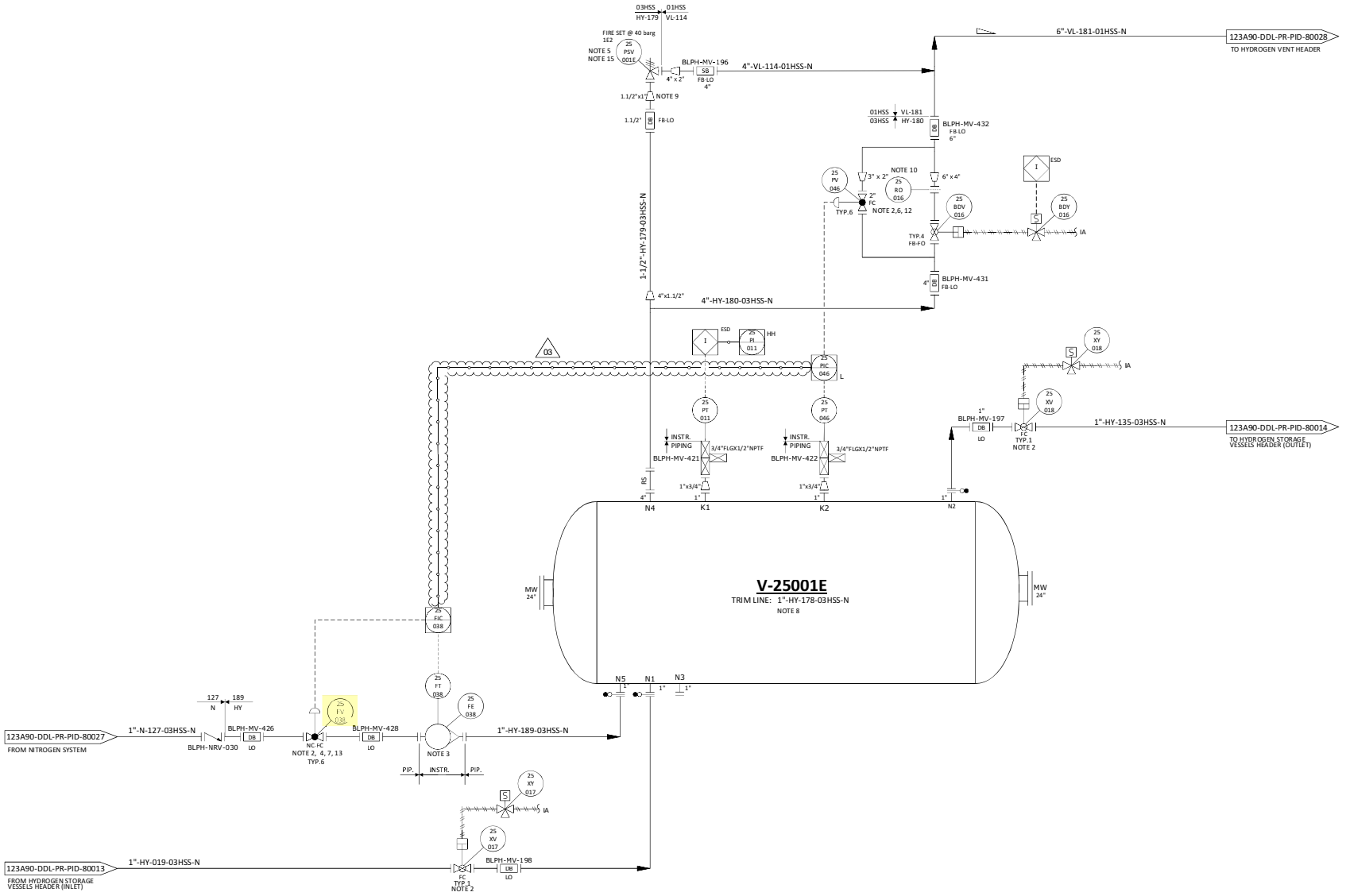
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

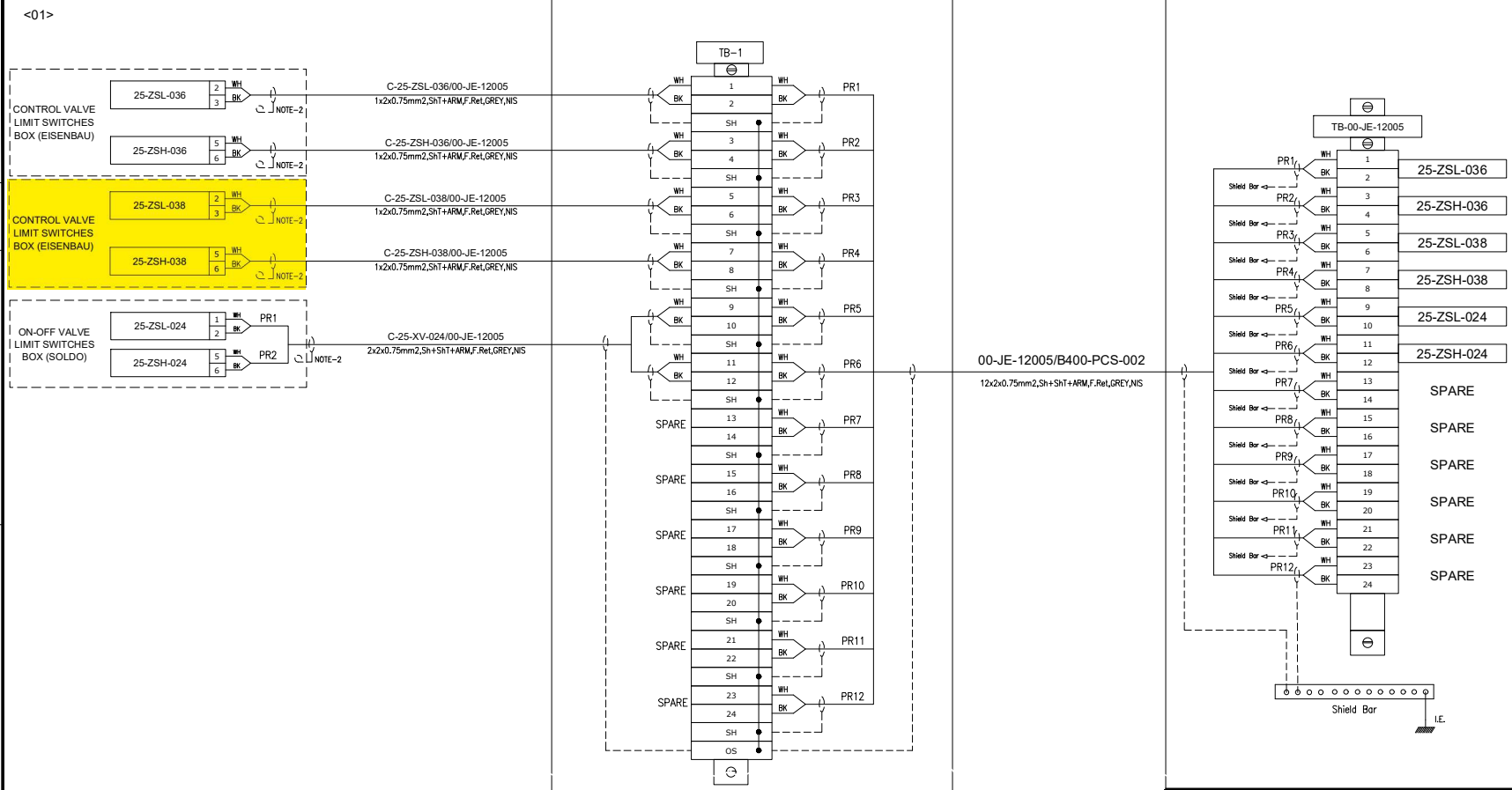
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12005	No.	MARSHALLING CABINET B400-PCS-002



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

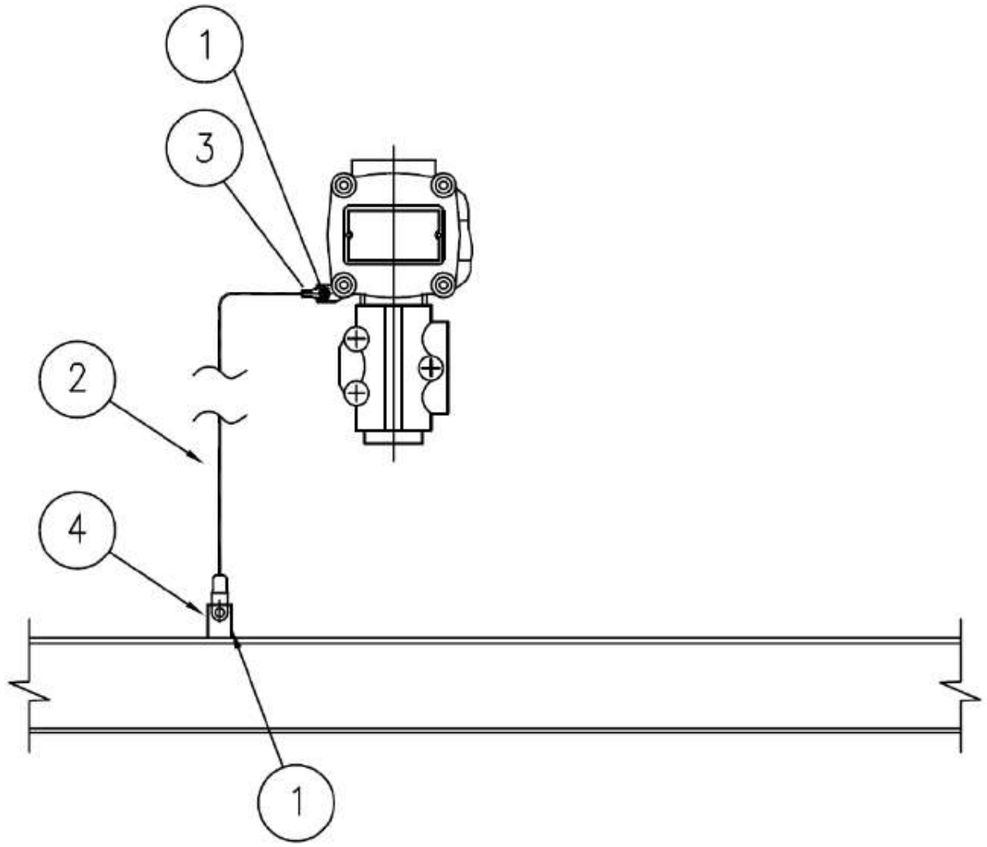
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12005

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90–DDL–IN–DG–40015	SHEET 021	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

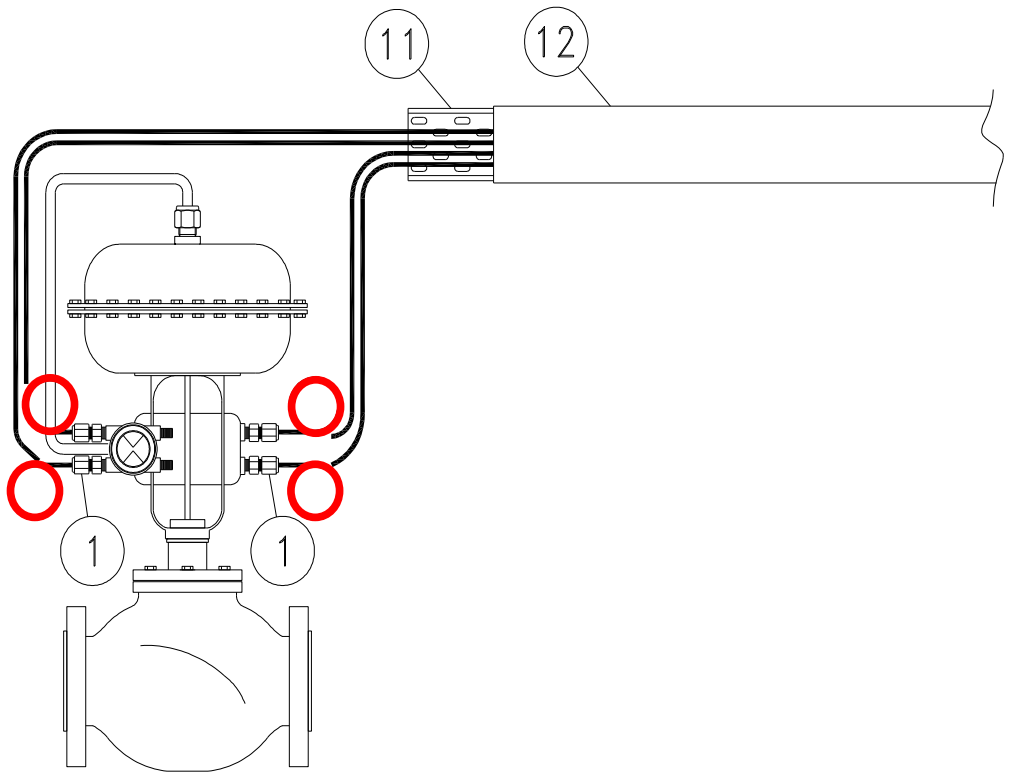
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
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NOTE:

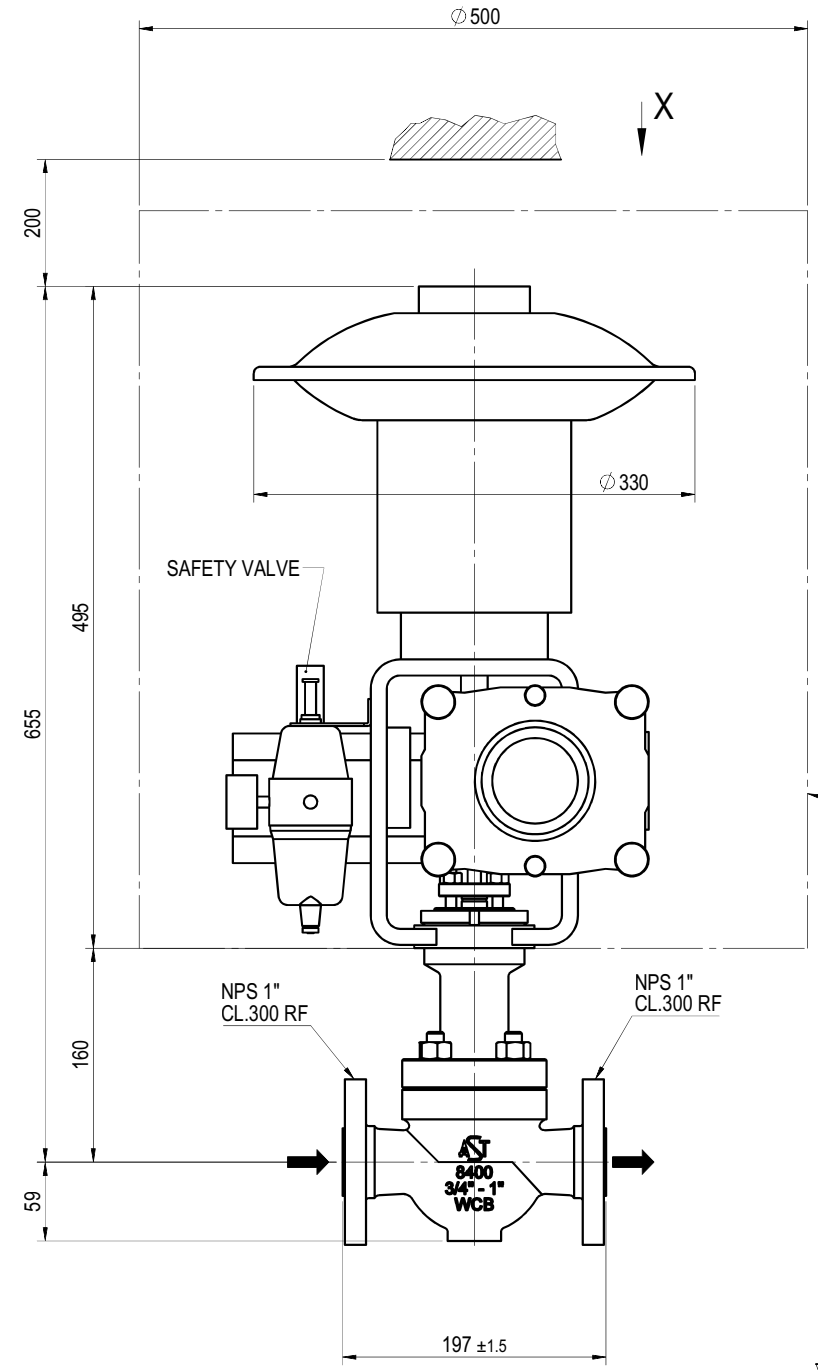
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

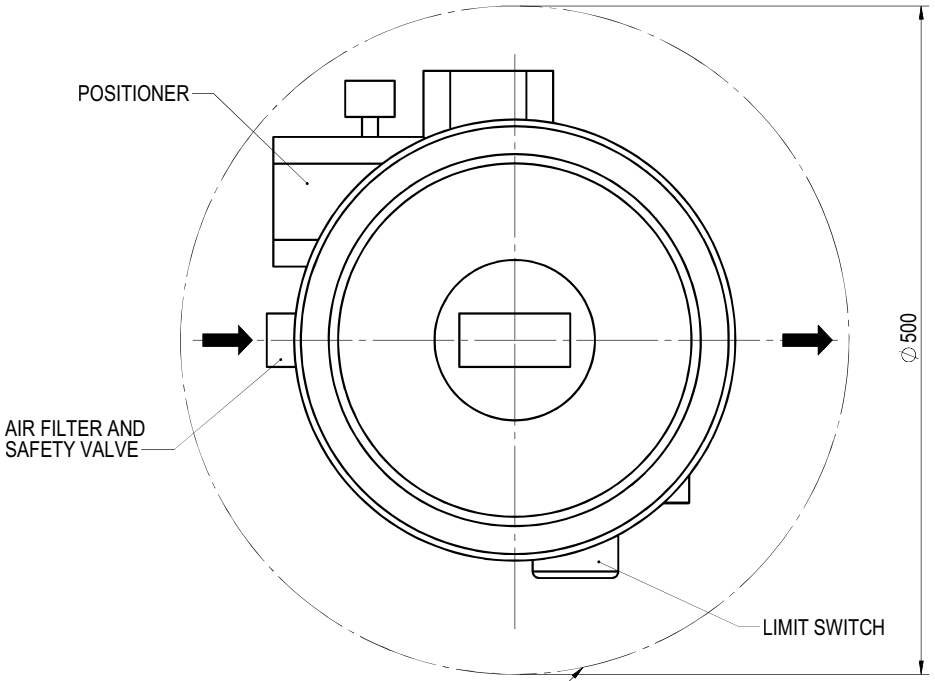
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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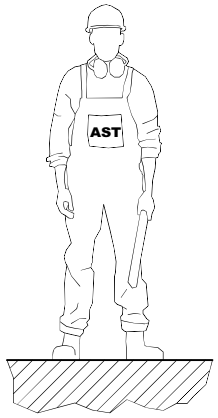
UPPER VIEW FROM "X"



MAXIMUM ACCESSORIES
OVERALL DIMENSION

POSITIONER ON BACK SIDE

MASS:
VALVE= ~ 12 kg
ACTUATOR= ~ 28 kg
TOTAL= ~ 40kg



General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-FV-031, 25-FV-032, 25-FV-033, 25-FV-034, 25-FV-036, 25-FV-038
Matricole / Serials	2400583, 2400584, 2400585, 2400586, 2400587, 2400588

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale

Mass kg

CR 00298

NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 1" PORT 1/4" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0100OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (MI) - Tel.02 934848.1 - Control valve division

GENERAL	1	Tag Number	P&ID Number			25-FV-038		123A90-DDL-PR-PID-80019	
	2	Service				NITROGEN FROM NITROGEN SYSTEM (U-64000) TO HYDROGEN STORAGE VESSEL (V-25001E)			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			1"-HY-189-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312 Gr.TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			NITROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 barg		100 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	17	Flow Rate (Gas)				Nm^3/h		40	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg		7	
	20	Pressure Drop				bar		max 7 - min 4	
	21	Inlet Temperature				°C		15	
	22	Inlet Density / Specific Gravity				kg/m^3		9.3	
	23	Inlet Compressibility Factor				-		0.99	
	24	Inlet Viscosity				cP		0.017	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-		1.4	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-		28	
CALCULATED RESULTS	28	Flow Coefficient Cv						0.3678 / 0.3846	
	29	Travel				75.6%			
	30	Sound Pressure Level				77.27 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HS03C02RFH)			
	33	Body Size	Trim Size			1"		1/4"	
	34	Rated Cv	Characteristics.			0.85		Equal% (11)	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 36L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				PTFE (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured (12, 13)			
	44	Rated Travel				13mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

						INSTRUMENT DATASHEET	CROSSWIND	
						Control Valve (Sheet 1 of 2)	ROSETTI MARINO	
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO			
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO		Sheet 14 of 37	
No.	Date	Description	By	Chkd	Appr	Code:	Dwg.No 123A90-DDL-IN-DS-40036	Rev. 01

ACTUATOR	50	MFR	Model	AST	SD11R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		15-30 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	(*)	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 15 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSH-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSH-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSH-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSH-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSH-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSH-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSH-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSH-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSH-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSH-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSH-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSH-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSH-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSH-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSH-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-ZSL-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-ZSL-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-ZSL-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5
25-ZSL-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSL-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSL-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSL-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6...T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
43-FE-001A	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6...T1 Gb		N/A	True	N/A	True	
43-FE-001B	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		T5MAXS		20ATEX1001X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	Ex db IIC T6...T1 Gb		N/A	True	N/A	True	
43-FT-001	Hydrogen form KO DRUM V-43001 to vent stack Q-43004	LOWER DECK	1724001317	Baker Hughes	Panametrics LLC		XGF868i-2-2-OI-H7-3-4-0-CC		17ATEX1304X	1724001317-IN-DA-00003 / 1724001317-IN-DS-00006	II 2G Ex db IIC T6 Gb		N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
43-LT-001	KO DRUM V-43001 high/low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240632	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-LT-003	H2 vent Q-43004 low level	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240633	SST77B-H-9-D-2-3-0-0-4 + MAN5-D1		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
43-PT-001	KO DRUM V-43001 pressure	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240650	SST76-H-7-G-2-9-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_7 HAZARDOUS-AREA_3
50-AT-020A	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020B	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-020C	Hydrogen Gas Detector	LOWER DECK	1724000448	PSC	Sensitron	-	SMART3GC2 S2097H2	Safe Area	CESI01ATEX013U	-	II 2 G Ex db IIC T5 Gb	-	A-5000	True	N/A	False	
50-AT-021A	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021B	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-AT-021C	Smoke Detector	LOWER DECK	1724000448	PSC	Hochiki	-	SOC-E-IS + YBN-R/4(IS)	Safe Area	Baseefa19ATEX0143X EC	-	II 1 G Ex-ia IIC T5 Ga	-	A-5000	True	N/A	False	
50-HS-001	Emergency push button	LOWER DECK	1724000448	PSC	E2S	-	BExCP3CBGSSNAP2A1RN24 E4K7RS820R	Safe Area	Sira 09ATEX3286X	-	II 2 GD Ex db eb mb IIC T4 Gb Ta = (-40°C to +65°C) Ex tb IIIC T75oC Db Ta = (-40°C to +65°C)	-	A-5000	True	N/A	True	
50-HS-020	Emergency push button	LOWER DECK	1724000448	PSC	STAHL	-	8040/11	Safe Area	PTB 01 ATEX 1105	-	II 2 G Ex db eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-5000	True	N/A	False	
50-PSV-006	Pressure Safety Valve for P-5001A	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PSV-007	Pressure Safety Valve for P-5001B	LOWER DECK	1724000936	PCM Group	TAI	N/A	3000W	Zone 1 IIB T3	BVI/ATEX/ITA/23/055	1724000936-MAC-DS-00034	II 2G Ex h IIB T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	False	N/A	False	
50-PT-001	Sea water from pump P-50001A	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240660	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-002	Sea water from pump P-50001B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240661	SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-PT-014	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240651	SST76-H-7-K-2-0-2-1-4 + MAN2-R6		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TE-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-001	Sea water from lift pump P-50001A/B	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240658	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-TT-002	Water disposal header to caisson B-50014	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240659	SST72-TH-1-C-9-1-B-4-3 + TWE		TI17ATEX304X	1724000979-IN-DA-00003 / 1724000979-IN-DS-00004	ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb	-	N/A	False	N/A	True	
50-XV-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-003	Sea water from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-004	Sea water recirculation from pump P-50001B	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XV-005	Drain Water discharge to Caisson	LOWER DECK	1724000204	RFS	BIFOLD	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	
50-XY-001	Sea water from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	
50-XY-002	Sea water recirculation from pump P-50001A	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	

Fiditas
explosion safety solutions

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[1] # EU – TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU.

[3] EU-Type Examination Certificate Number: **FIDI 20 ATEX 0039X** Issue: **1**

[4] Product: **Limit switch box**

Type: **Guardbox – GD series**

[5] Manufacturer: **Eisenbau s.r.l.**

[6] Address: **Viale Europa 39, 20047 Cusago (MI), Italy**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

[8] FIDITAS Ltd., Notified Body number 2829 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II of the Directive.

The examination and test results are recorded in confidential Report No: **FIDI 20 CR 030**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-1:2014** **EN 60079-31:2014**

except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign 'X' is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

[11] This EU-Type Examination Certificate relates only to the design, examination and test of the specified product in accordance with Annex III. Further requirements of the Directive apply to the manufacturing process and supply of this products. These are not covered by this certificate.

[12] The marking of the product shall include the following:

II 2G Ex db IIC T6...T4 Gb

II 2D Ex tb IIIC T85°C...T135°C Db

Our ref.: 20.CRT.261

Date: 30.10.2020.

Fiditas d.o.o. ZAGREB

FIDITAS Ltd.
Certification department
Approved:

Marino Kelava, M.E.Eng.

Fiditas Ltd. Karlovačka cesta 197, 10250 Zagreb-Lučko, Croatia
Phone: +385 1 5578565; info@fiditas.com ; www.fiditas.com

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[13] **SCHEDULE**

[14] **EU - TYPE EXAMINATION CERTIFICATE No.:** **FIDI 20 ATEX 0039X**

[15] **Description of product**

Guardbox limit switch boxes are electromechanical devices used for the monitoring of the operation of industrial valves in facilities. Guardbox devices are used to control the position of the valve and to provide electrical feedback signal of valve position status to plant control system. They are equipped with a visible position indicator that represents a true indication of valve position.

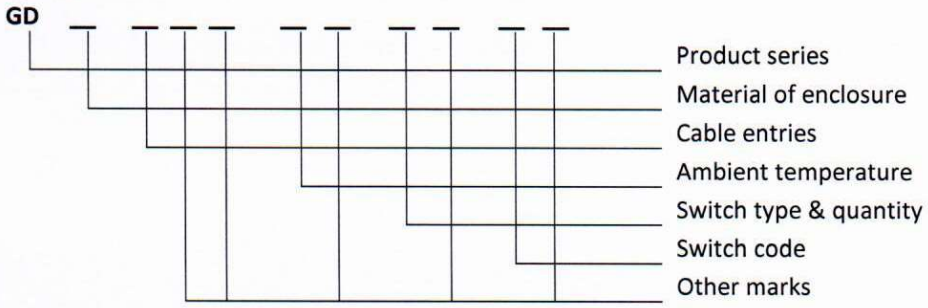
Separately certified cable glands in type of protection flameproof enclosure "db" and protection by enclosure "tb" shall be used for cable entry.

Technical data:

Nominal voltage:	0 Vdc - 125 Vdc
	0 Vac - 250 Vac
Nominal current:	0.1 A – 10 A
Ambient temperature range:	-60°C to +105°C
Mechanical protection:	IP 66 according to EN IEC 60079-0 and EN 60529
	IP 68 (20 m / 2h) according to EN 60529

$T_{a\ max}$ [°C]	Maximally allowed power dissipation [W]	Temperature class	Maximum surface temperature	Min. cable temperature resistance [°C]
40	10	T6	T85°C	70
65	4	T6	T85°C	80
	10	T5	T100°C	100
85	4	T5	T100°C	100
	10	T4	T135°C	120
90	4	T4	T135°C	105
	10			125
105	4	T4	T135°C	120

Marking:



Warning markings:

"DO NOT OPEN IN A GAS/DUST EXPLOSIVE ATMOSPHERE"

"DUE TO RISK OF STATIC HAZARD, THE ENCLOSURE MUST ONLY BE CLEANED WITH A DAMP CLOTH"

Fiditas Ltd. Karlovačka cesta 197, 10250 Zagreb-Lučko, Croatia
Phone: +385 1 5578565; info@fiditas.com ; www.fiditas.com

[16] Confidential Report No. FIDI 20 CR 030

[16.1] Routine testing

None

[17] Specific Conditions of Use

- Flameproof joints are not intended to be repaired.
- An appropriate method of installation, maintenance and operation should prevent the accumulation of static charges on the enclosure of the device.
- Use screws of quality A2-70 or A4-70 according to UNI 5931 with the ultimate tensile strength of at least 700 N/mm^2.

[18] Essential Health and Safety Requirements

Covered by the conformity with harmonized standards listed under item 9.

[19] Drawings and Documents

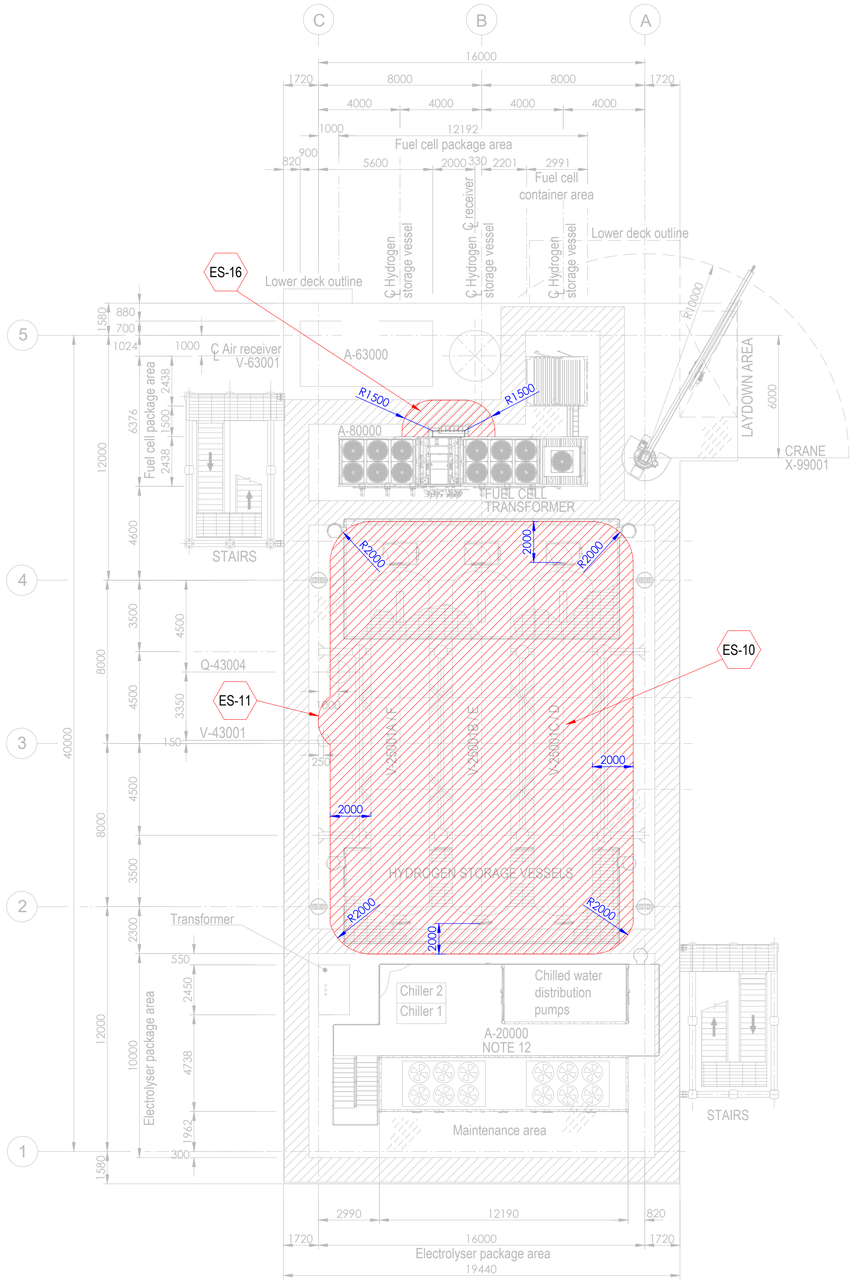
Title:	Drawing No.:	Rev. level:	Date:
Installation, Operation & Maintenance Manual	0100-ENG	6	21.10.2020.
Certification drawings:			
Stainless steel body GD	EC-0101005-02	02	14.10.2020.
Cover GD	EC-0102002-02	02	21.10.2020.
Part list switch box blind GD	EC-0120003-02	02	21.10.2020.
Body GD	EC-0101002-01	01	10.02.2015
Stainless steel cover GD	EC-0102009-02	02	14.10.2020.
Part list GD	EC-0120001-02	02	21.10.2020.
Part list GD stainless steel	EC-0120002-02	02	21.10.2020.
Blind cover GD	EC-0102008-01	02	21.10.2020.
Part list switch box blind stainless GD	EC-0120004-02	02	21.10.2020.
Stainless steel cover blind GD	EC-0102010-02	02	14.10.2020.
Shaft box GD certification	EC-0104001-00	00	10.07.2014.
Shaft switch box blind certification	EC-0104003-00	00	10.07.2014.
GD limit switch box gasket	EC-0107002-00	00	18.12.2014.
External nameplate with certification data	EC-0108001-01	01	14.10.2020.
Screw box	EC-0109001-00	00	30.07.2014.
Width of flameproof joint GD	EC-0120011-00	00	15.09.2014.
Width of flameproof joint GD stainless steel	EC-0120012-00	00	15.09.2014.
External nameplate for marking operating parameters	EC-0108005-00	00	14.10.2020.

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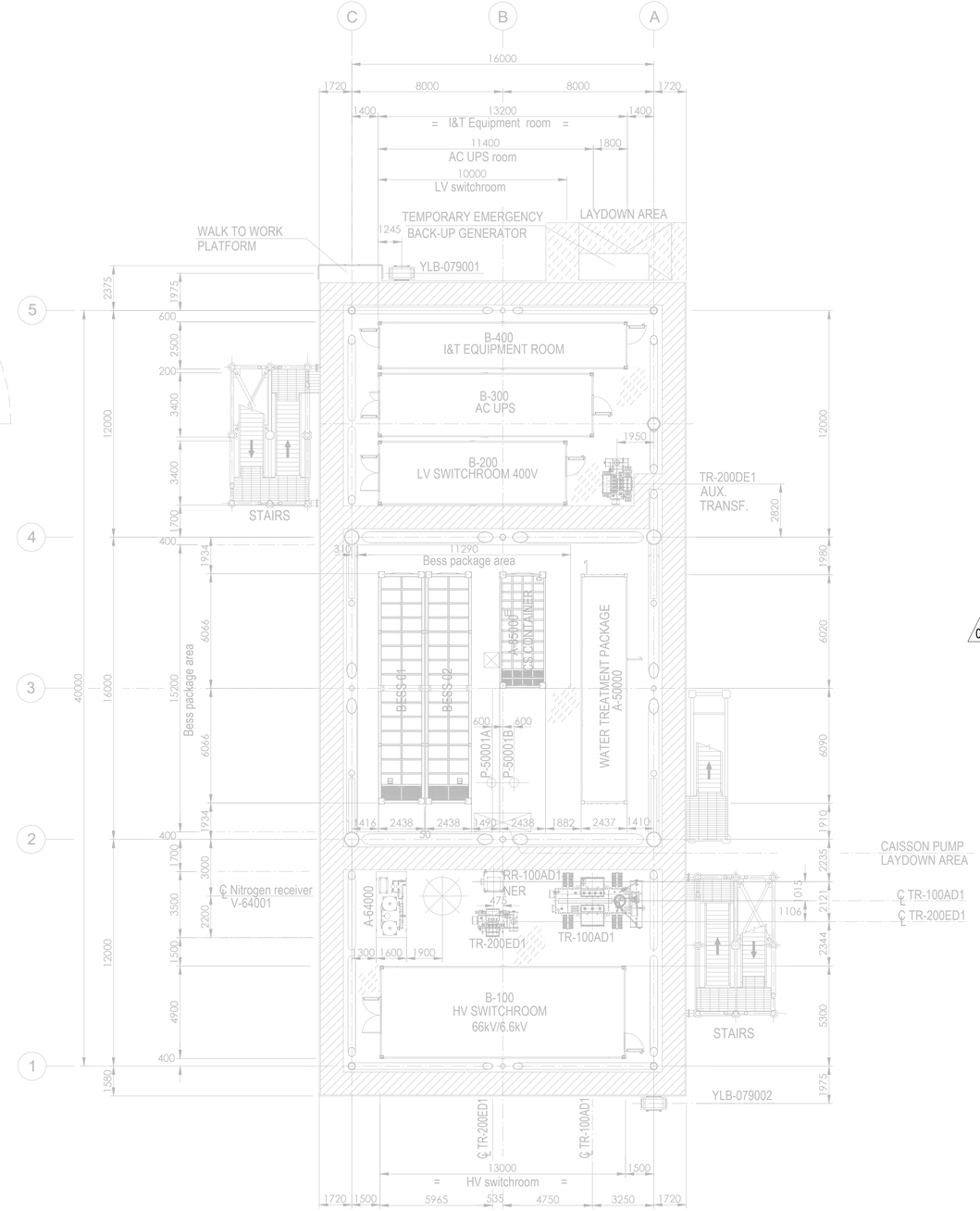
Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583	Declaration of Conformity By AST_ATEX- SN "2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584	Declaration of Conformity By AST_ATEX- SN "2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585	Declaration of Conformity By AST_ATEX- SN "2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586	Declaration of Conformity By AST_ATEX- SN "2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587	Declaration of Conformity By AST_ATEX- SN "2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588	Declaration of Conformity By AST_ATEX- SN "2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589	Declaration of Conformity By AST_ATEX- SN "2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590	Declaration of Conformity By AST_ATEX- SN "2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591	Declaration of Conformity By AST_ATEX- SN "2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592	Declaration of Conformity By AST_ATEX- SN "2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593	Declaration of Conformity By AST_ATEX- SN "2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594	Declaration of Conformity By AST_ATEX- SN "2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595	Declaration of Conformity By AST_ATEX- SN "2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596	Declaration of Conformity By AST_ATEX- SN "2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597	Declaration of Conformity By AST_ATEX- SN "2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598	Declaration of Conformity By AST_ATEX- SN "2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-046	Air set Pressure Gauge Filter	3"-HY-180-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-049	Air set Pressure Gauge Filter	3"-HY-184-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055A	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055B	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031A	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031B	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-031	Safety Valve	1"-HY-153-03HSS-N	COITECH	SLK	24-03790	CE Ex - II

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



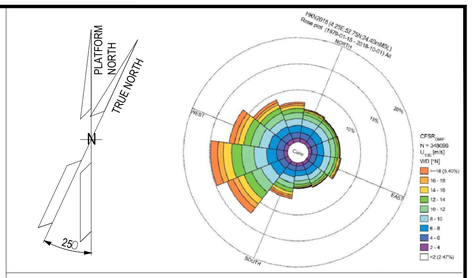
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

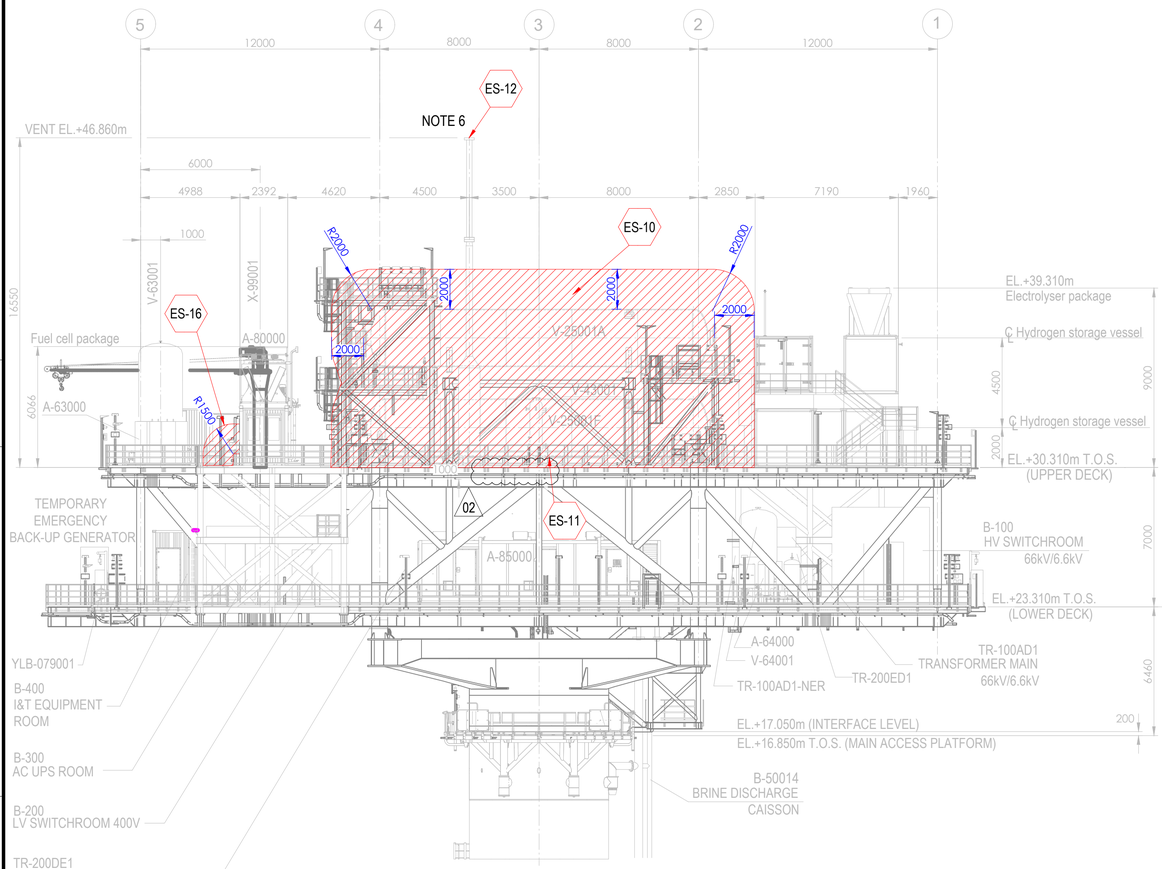
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

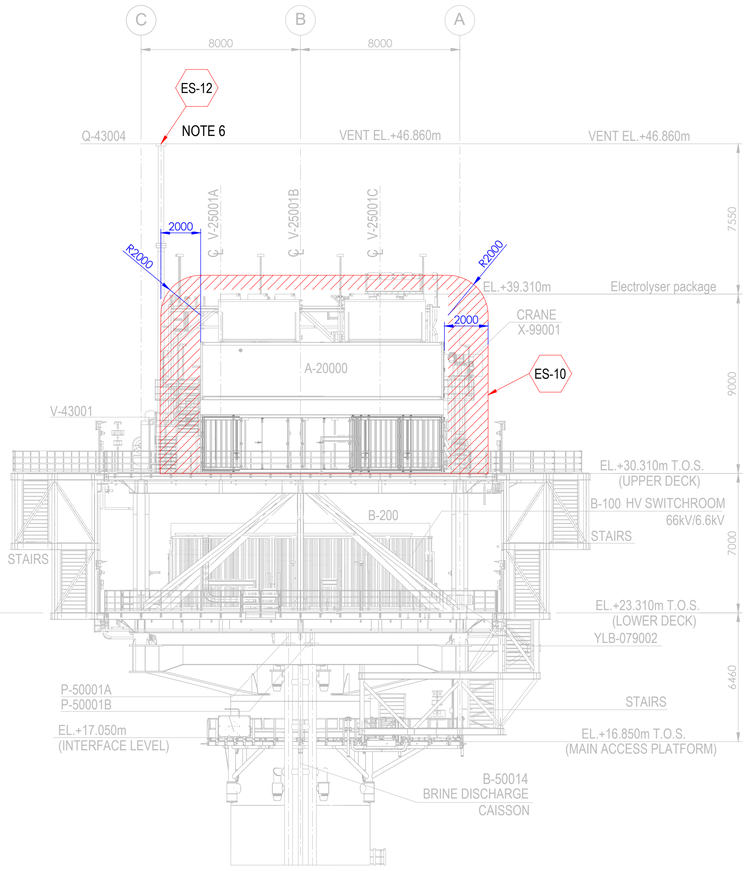
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

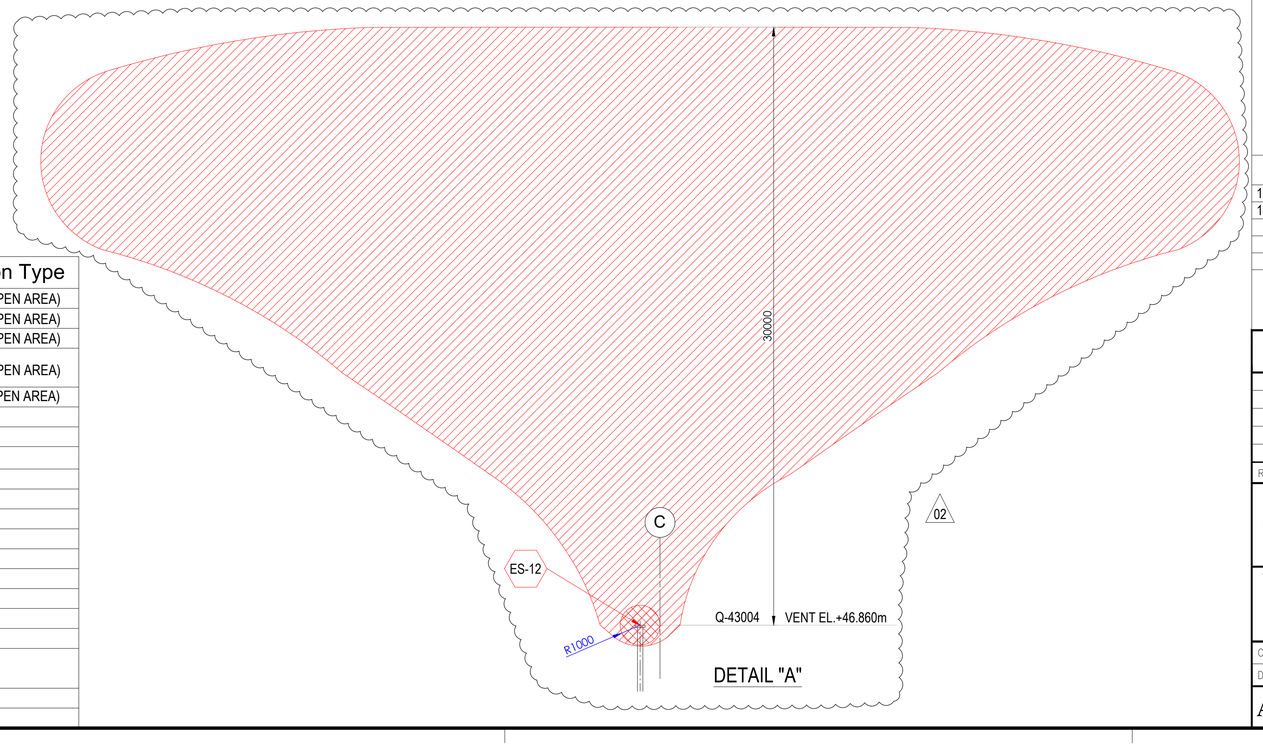


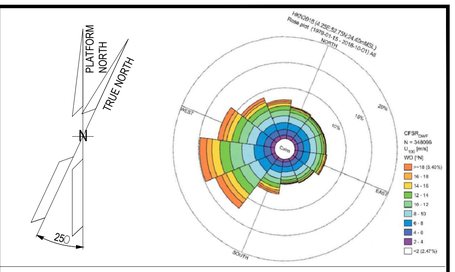
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-ZSHL-046	: Open/closed Limit Switches - Vessel V-25001E Pressure Control	Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10001750	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		Batch n°: 44219			
Manufacturer	EISENBAU			**Model**		GDSN0LIS2MS290			
Cert No.	FIDI 20 ATEX 0039X			**Equipment Ambient Temp.**		-25°C to +85°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T5	**IP Rating**	IP66/68

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	PL	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	OK	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	OK	
13	Condition of enclosure gaskets is satisfactory	x	OK	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	OK	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	OK	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-ZSHL-046	: Open/closed Limit Switches - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001750	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	OK	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	OK	
33	All cable cores are uniquely labeled	x	OK	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	OK	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	OK	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	OK	
52	Flame path are clean and undamaged	x	OK	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-ZSHL-046	: Open/closed Limit Switches - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001750	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

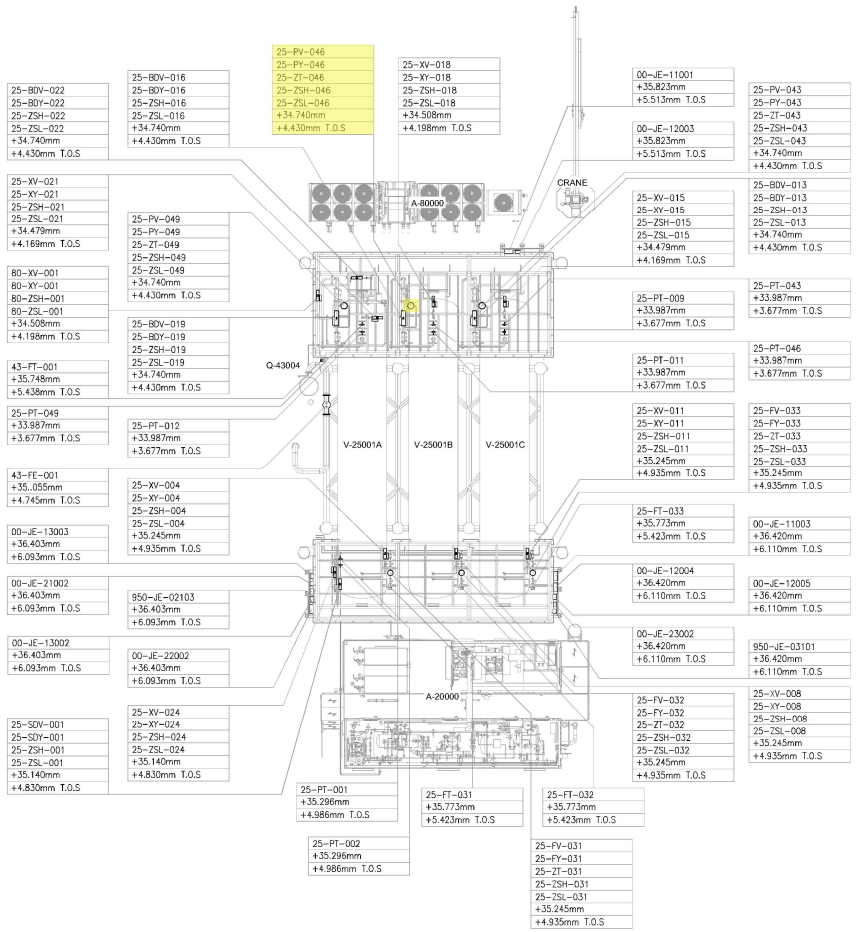
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-14	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-14T10:09:33.934Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T15:43:37.346Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

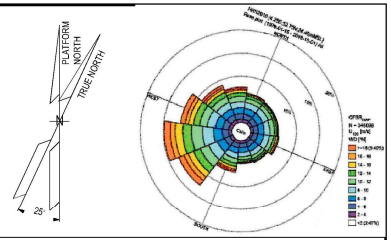
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

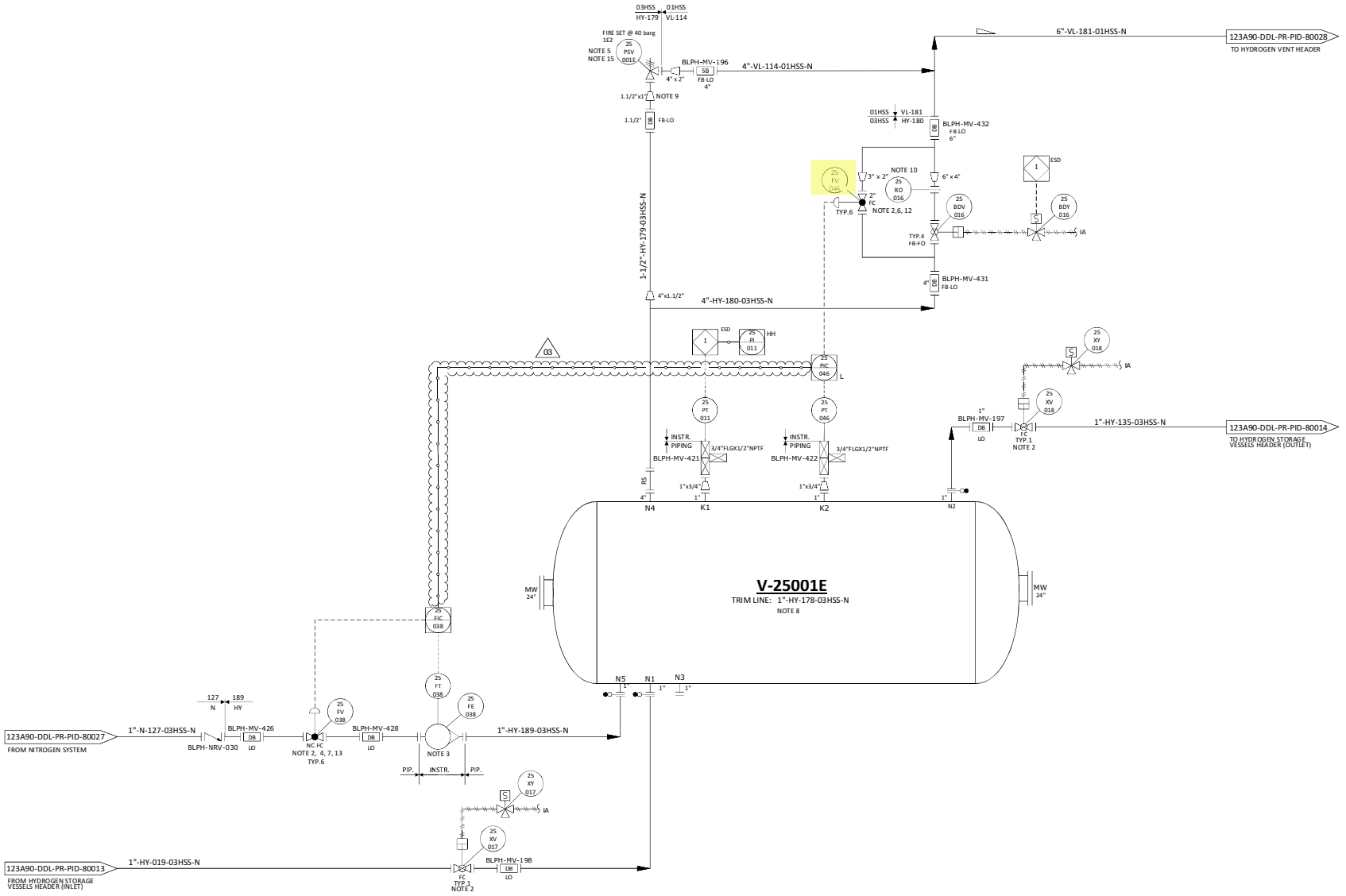
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12001	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 25-ZSL-021 (1 WH, 2 BK) → PR1
- 25-ZSH-021 (5 WH, 6 BK) → PR2
- NOTE-2

C-25-XV-021/00-JE-12001
2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-046 (2 WH, 3 BK) NOTE-2
- 25-ZSH-046 (5 WH, 6 BK) NOTE-2

C-25-ZSL-046/00-JE-12001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

C-25-ZSH-046/00-JE-12001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-049 (2 WH, 3 BK) NOTE-2
- 25-ZSH-049 (5 WH, 6 BK) NOTE-2

C-25-ZSL-049/00-JE-12001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

C-25-ZSH-049/00-JE-12001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-040 (2 WH, 3 BK) NOTE-2
- 25-ZSH-040 (5 WH, 6 BK) NOTE-2

C-25-ZSL-040/00-JE-12001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

C-25-ZSH-040/00-JE-12001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-043 (2 WH, 3 BK) NOTE-2
- 25-ZSH-043 (5 WH, 6 BK) NOTE-2

C-25-ZSL-043/00-JE-12001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

C-25-ZSH-043/00-JE-12001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

TB-2

WH 25	BK 26	PR1
SH		
WH 27	BK 28	PR2
SH		
WH 29	BK 30	PR3
SH		
WH 31	BK 32	PR4
SH		
WH 33	BK 34	PR5
SH		
WH 35	BK 36	PR6
SH		
WH 37	BK 38	PR7
SH		
WH 39	BK 40	PR8
SH		
WH 41	BK 42	PR9
SH		
WH 43	BK 44	PR10
SH		
WH 45	BK 46	PR11
SH		
WH 47	BK 48	PR12
SH		
OS		

SPARE
SPARE

00-JE-12001_2/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12001

PR1	WH 25 / BK 26	25-ZSL-021
Shield Bar		
PR2	WH 27 / BK 28	25-ZSH-021
Shield Bar		
PR3	WH 29 / BK 30	25-ZSL-046
Shield Bar		
PR4	WH 31 / BK 32	25-ZSH-046
Shield Bar		
PR5	WH 33 / BK 34	25-ZSL-049
Shield Bar		
PR6	WH 35 / BK 36	25-ZSH-049
Shield Bar		
PR7	WH 37 / BK 38	25-ZSL-040
Shield Bar		
PR8	WH 39 / BK 40	25-ZSH-040
Shield Bar		
PR9	WH 41 / BK 42	25-ZSL-043
Shield Bar		
PR10	WH 43 / BK 44	25-ZSH-043
Shield Bar		
PR11	WH 45 / BK 46	SPARE
Shield Bar		
PR12	WH 47 / BK 48	SPARE

Shield Bar
I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

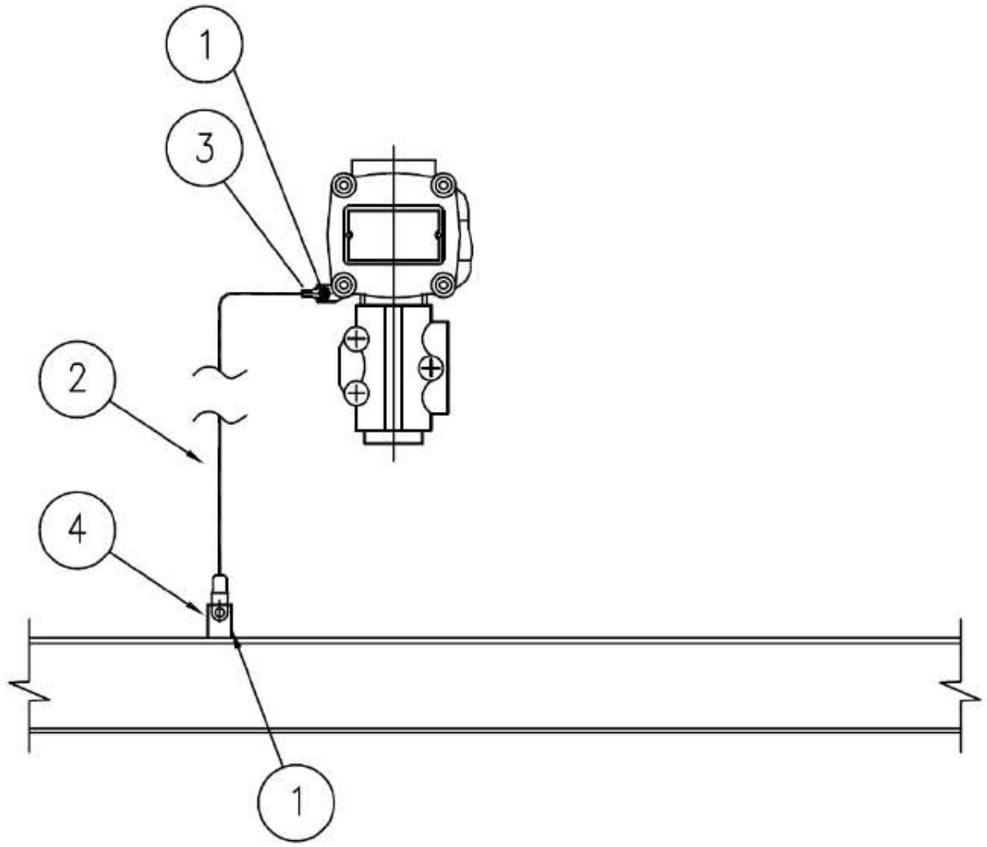
TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-12001-SH.2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 016	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DD-20090
REV.: 2_I | DATE: 07/11/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

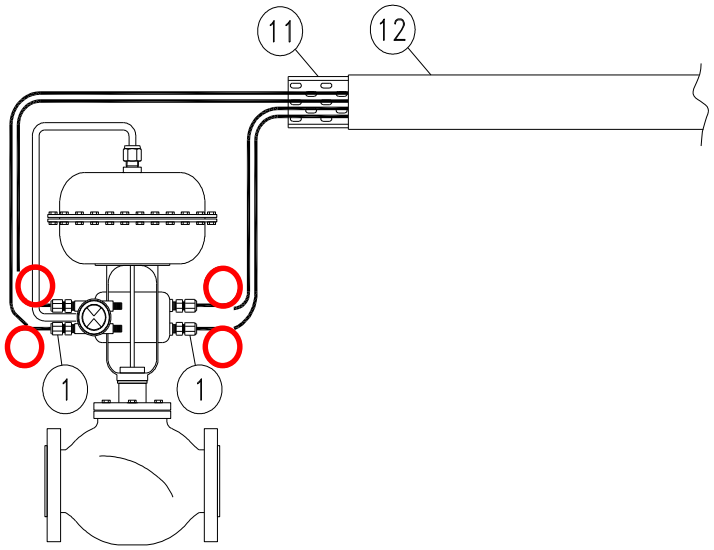
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
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NOTE:

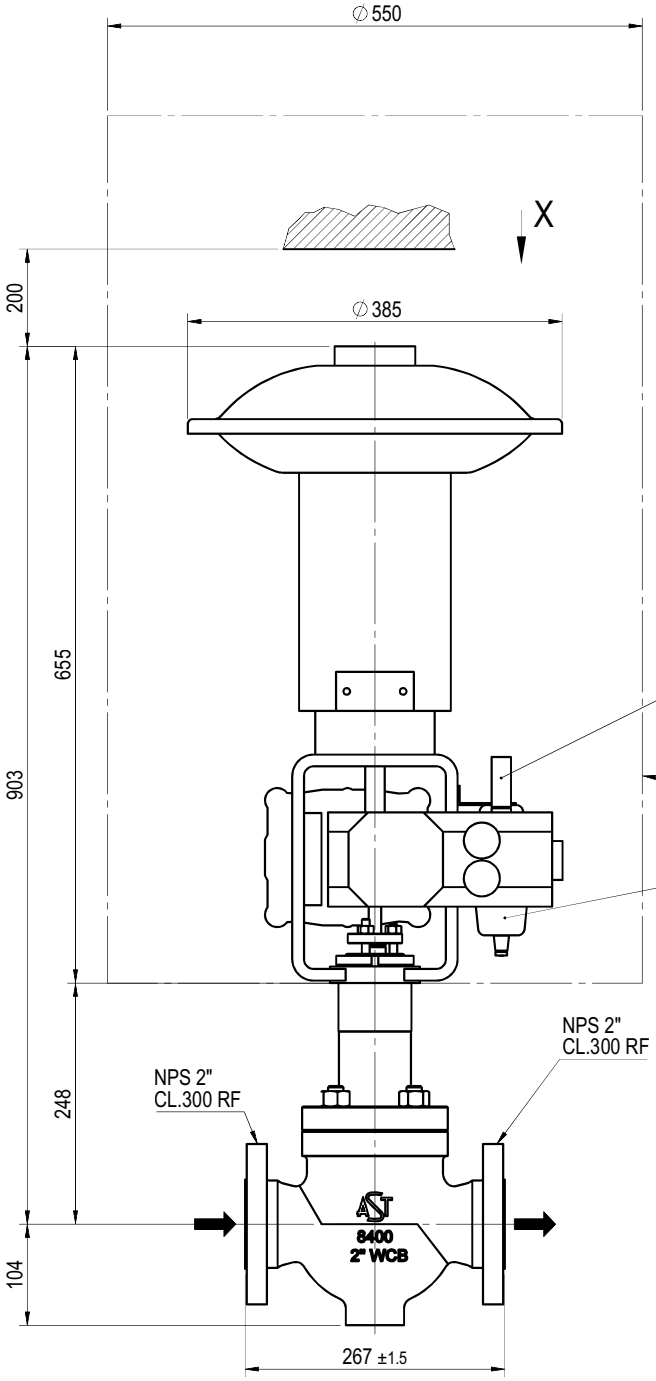
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

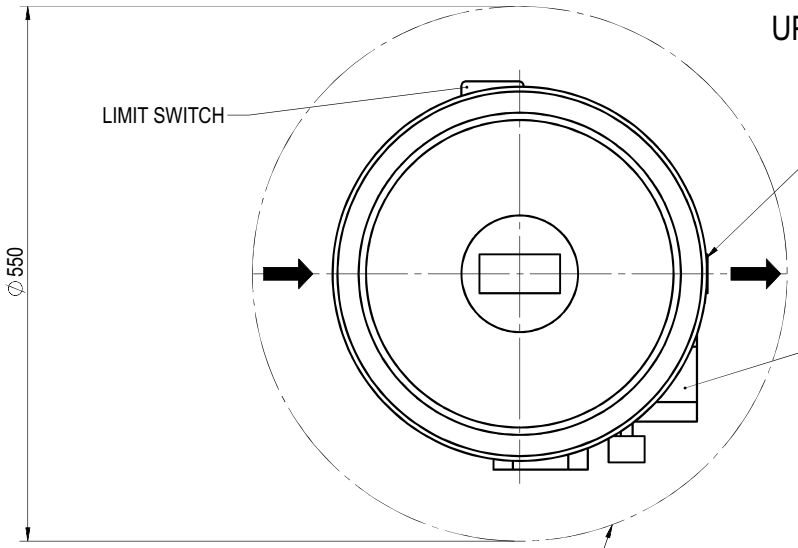
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

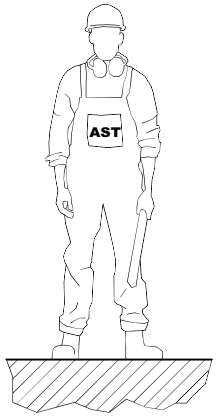
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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POSITIONER ON FRONT SIDE

MASS:
VALVE= ~ 30 kg
ACTUATOR= ~ 45 kg
TOTAL= ~ 75 kg

General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-PV-035, 25-PV-037, 25-PV-040, 25-PV-043, 25-PV-046, 25-PV-049
Matricole / Serials	2400589, 2400590, 2400591, 2400592, 2400593, 2400594

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale | Mass kg | CR 00299 | NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 2" PORT 1" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0200OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (Mi) - Tel.02 934848.1 - Control valve division

GENERAL	1	Tag Number	P&ID Number			25-PV-046		123A90-DDL-PR-PID-80019	
	2	Service				HYDROGEN FROM STORAGE VESSEL (V-25001E) TO HYDROGEN VENT HEADER			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			3"-HY-180-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		3" / 3.05 mm		3" / 3.05 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312/TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			HYDROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 Barg		80 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	N2	H2	
	17	Flow Rate (Gas)				Nm^3/h	40	500	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg	min 1 - max 4	min 1 - max 4	
	20	Pressure Drop				bar	0.7	0.7	
	21	Inlet Temperature				°C	AMB	AMB	
	22	Inlet Density / Specific Gravity				kg/m^3	2.3 - 5.8	0.16 - 0.41	
	23	Inlet Compressibility Factor				-	1	1	
	24	Inlet Viscosity				cP	0.01	0,01	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-	1.3	1.3	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-	28	2	
CALCULATED RESULTS	28	Flow Coefficient Cv					1.719 / 0.9689	5.772 / 3.241	
	29	Travel				80.8%			
	30	Sound Pressure Level				83.01 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HT03C02RFH)			
	33	Body Size	Trim Size			2"		1"	
	34	Rated Cv	Characteristics.			13		(11) Equal%	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				ASTM A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 316L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				Grafite - VF1 (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured Plug (12, 13)			
	44	Rated Travel				25mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

						INSTRUMENT DATASHEET	CROSSWIND	
						Control Valve (Sheet 1 of 2)	ROSETTI MARINO	
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO		Sheet 26 of 37	
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO			
No.	Date	Description	By	Chkd	Appr	Code:	Dwg.No 123A90-DDL-IN-DS-40036	Rev. 01

ACTUATOR	50	MFR	Model	AST	SD13R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		20-44 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	Magnetic	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.
(2) Hydrogen service - Packing ISO 15848-1

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 27 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-ZSH-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSH-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSH-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSH-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSH-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSH-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSH-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSH-035	Vessel V-25001A pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSH-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSH-037	Vessel V-25001B pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSH-040	Vessel V-25001C pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-043	Vessel V-25001D pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSH-046	Vessel V-25001E pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSH-049	Vessel V-25001F pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSH-055A	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSH-055B	Hyrogen from vessels outlet header pressure control	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSL-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-ZSL-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSL-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-ZSL-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSL-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSL-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-ZSL-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSL-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5
25-ZSL-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSL-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-ZSL-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSL-023	Hyrogen from vessels outlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6
25-ZSL-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSL-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSL-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	EISENBAU	Batch:44219	GUARDABOX - GD SERIES GDSN0LIS2MS290	ATEX ZONE 2	FIDI 20 ATEX 0039X	1724000740-IN-DA-00004	CE Ex - II 2G Ex db IIC T6..T4	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2

Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583	Declaration of Conformity By AST_ATEX- SN "2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584	Declaration of Conformity By AST_ATEX- SN "2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585	Declaration of Conformity By AST_ATEX- SN "2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586	Declaration of Conformity By AST_ATEX- SN "2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587	Declaration of Conformity By AST_ATEX- SN "2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588	Declaration of Conformity By AST_ATEX- SN "2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589	Declaration of Conformity By AST_ATEX- SN "2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590	Declaration of Conformity By AST_ATEX- SN "2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591	Declaration of Conformity By AST_ATEX- SN "2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592	Declaration of Conformity By AST_ATEX- SN "2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593	Declaration of Conformity By AST_ATEX- SN "2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594	Declaration of Conformity By AST_ATEX- SN "2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595	Declaration of Conformity By AST_ATEX- SN "2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596	Declaration of Conformity By AST_ATEX- SN "2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597	Declaration of Conformity By AST_ATEX- SN "2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598	Declaration of Conformity By AST_ATEX- SN "2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-046	Air set Pressure Gauge Filter	3"-HY-180-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-049	Air set Pressure Gauge Filter	3"-HY-184-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055A	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055B	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031A	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031B	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-031	Safety Valve	1"-HY-153-03HSS-N	COITECH	SL

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3635

[1] # EU – TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU.

[3] EU-Type Examination Certificate Number: **FIDI 20 ATEX 0039X** Issue: **1**

[4] Product: **Limit switch box**

Type: **Guardbox – GD series**

[5] Manufacturer: **Eisenbau s.r.l.**

[6] Address: **Viale Europa 39, 20047 Cusago (MI), Italy**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

[8] FIDITAS Ltd., Notified Body number 2829 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II of the Directive.

The examination and test results are recorded in confidential Report No: **FIDI 20 CR 030**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-1:2014** **EN 60079-31:2014**

except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign 'X' is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

[11] This EU-Type Examination Certificate relates only to the design, examination and test of the specified product in accordance with Annex III. Further requirements of the Directive apply to the manufacturing process and supply of this products. These are not covered by this certificate.

[12] The marking of the product shall include the following:

II 2G Ex db IIC T6...T4 Gb

II 2D Ex tb IIIC T85°C...T135°C Db

Our ref.: 20.CRT.261

Date: 30.10.2020.

Fiditas d.o.o. ZAGREB

FIDITAS Ltd.
Certification department
Approved:

Marino Kelava, M.E.Eng.

Fiditas Ltd. Karlovačka cesta 197, 10250 Zagreb-Lučko, Croatia
Phone: +385 1 5578565; info@fiditas.com ; www.fiditas.com

This certificate may only be reproduced in its entirety, without any change, schedule included

[13] **SCHEDULE**

[14] **EU - TYPE EXAMINATION CERTIFICATE No.:** **FIDI 20 ATEX 0039X**

[15] **Description of product**

Guardbox limit switch boxes are electromechanical devices used for the monitoring of the operation of industrial valves in facilities. Guardbox devices are used to control the position of the valve and to provide electrical feedback signal of valve position status to plant control system. They are equipped with a visible position indicator that represents a true indication of valve position.

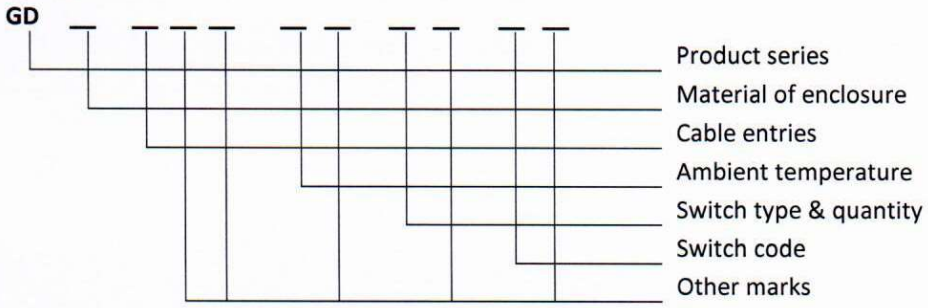
Separately certified cable glands in type of protection flameproof enclosure "db" and protection by enclosure "tb" shall be used for cable entry.

Technical data:

Nominal voltage:	0 Vdc - 125 Vdc
	0 Vac - 250 Vac
Nominal current:	0.1 A – 10 A
Ambient temperature range:	-60°C to +105°C
Mechanical protection:	IP 66 according to EN IEC 60079-0 and EN 60529
	IP 68 (20 m / 2h) according to EN 60529

$T_{a\ max}$ [°C]	Maximally allowed power dissipation [W]	Temperature class	Maximum surface temperature	Min. cable temperature resistance [°C]
40	10	T6	T85°C	70
65	4	T6	T85°C	80
	10	T5	T100°C	100
85	4	T5	T100°C	100
	10	T4	T135°C	120
90	4	T4	T135°C	105
	10			125
105	4	T4	T135°C	120

Marking:



Warning markings:

"DO NOT OPEN IN A GAS/DUST EXPLOSIVE ATMOSPHERE"

"DUE TO RISK OF STATIC HAZARD, THE ENCLOSURE MUST ONLY BE CLEANED WITH A DAMP CLOTH"

Fiditas Ltd. Karlovačka cesta 197, 10250 Zagreb-Lučko, Croatia
Phone: +385 1 5578565; info@fiditas.com ; www.fiditas.com

[16] Confidential Report No. FIDI 20 CR 030

[16.1] Routine testing

None

[17] Specific Conditions of Use

- Flameproof joints are not intended to be repaired.
- An appropriate method of installation, maintenance and operation should prevent the accumulation of static charges on the enclosure of the device.
- Use screws of quality A2-70 or A4-70 according to UNI 5931 with the ultimate tensile strength of at least 700 N/mm^2.

[18] Essential Health and Safety Requirements

Covered by the conformity with harmonized standards listed under item 9.

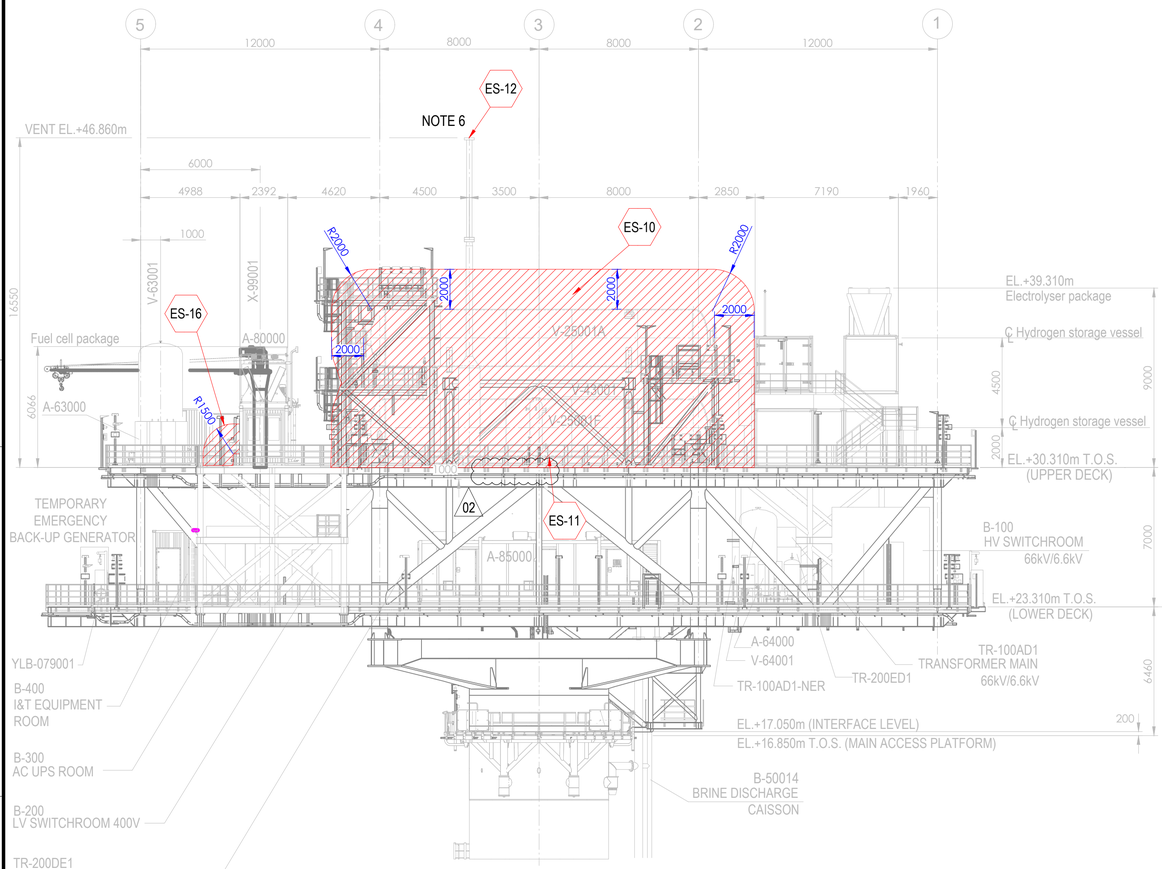
[19] Drawings and Documents

Title:	Drawing No.:	Rev. level:	Date:
Installation, Operation & Maintenance Manual	0100-ENG	6	21.10.2020.
Certification drawings:			
Stainless steel body GD	EC-0101005-02	02	14.10.2020.
Cover GD	EC-0102002-02	02	21.10.2020.
Part list switch box blind GD	EC-0120003-02	02	21.10.2020.
Body GD	EC-0101002-01	01	10.02.2015
Stainless steel cover GD	EC-0102009-02	02	14.10.2020.
Part list GD	EC-0120001-02	02	21.10.2020.
Part list GD stainless steel	EC-0120002-02	02	21.10.2020.
Blind cover GD	EC-0102008-01	02	21.10.2020.
Part list switch box blind stainless GD	EC-0120004-02	02	21.10.2020.
Stainless steel cover blind GD	EC-0102010-02	02	14.10.2020.
Shaft box GD certification	EC-0104001-00	00	10.07.2014.
Shaft switch box blind certification	EC-0104003-00	00	10.07.2014.
GD limit switch box gasket	EC-0107002-00	00	18.12.2014.
External nameplate with certification data	EC-0108001-01	01	14.10.2020.
Screw box	EC-0109001-00	00	30.07.2014.
Width of flameproof joint GD	EC-0120011-00	00	15.09.2014.
Width of flameproof joint GD stainless steel	EC-0120012-00	00	15.09.2014.
External nameplate for marking operating parameters	EC-0108005-00	00	14.10.2020.

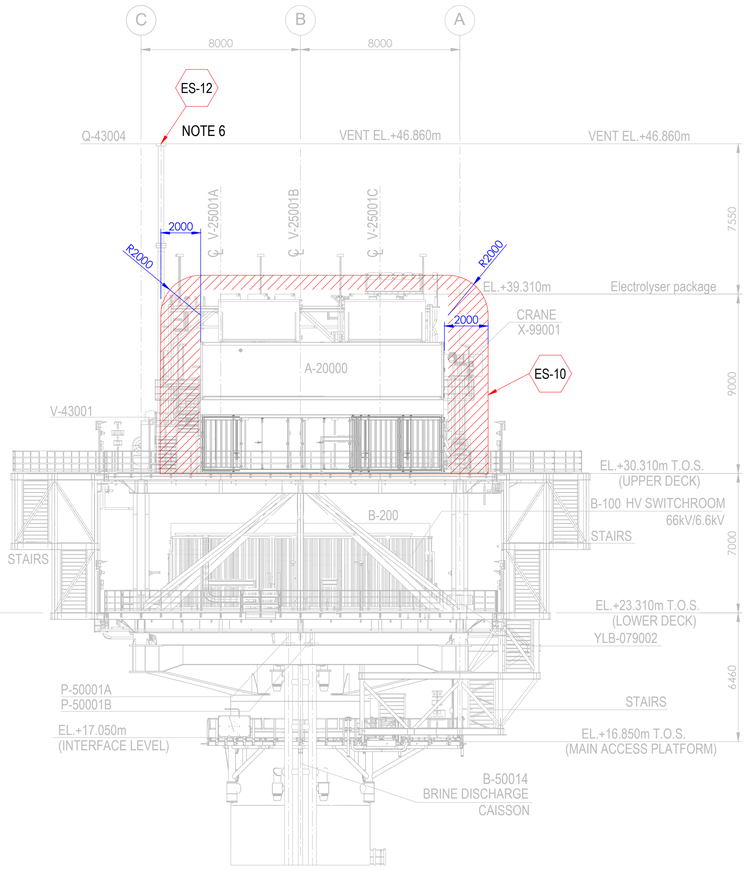
Fiditas Ltd. Karlovačka cesta 197, 10250 Zagreb-Lučko, Croatia
Phone: +385 1 5578565; info@fiditas.com ; www.fiditas.com

DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

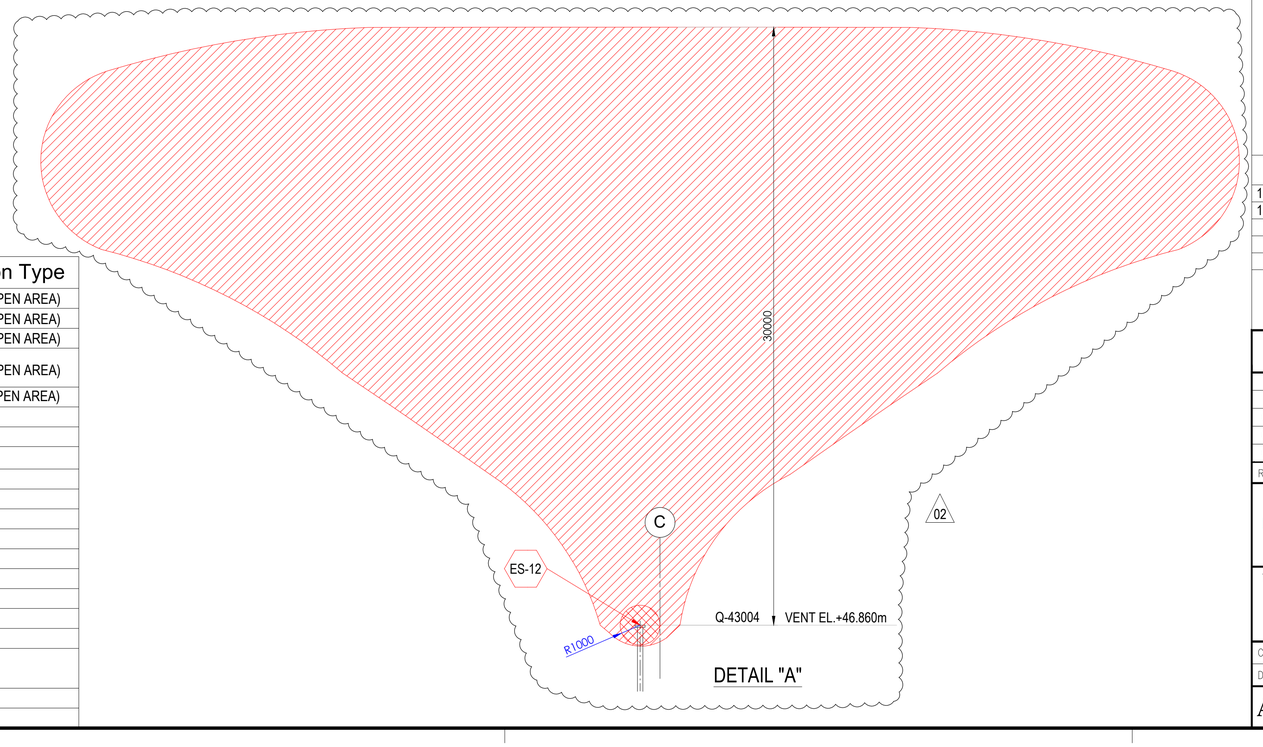


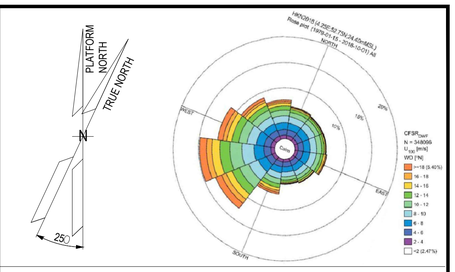
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

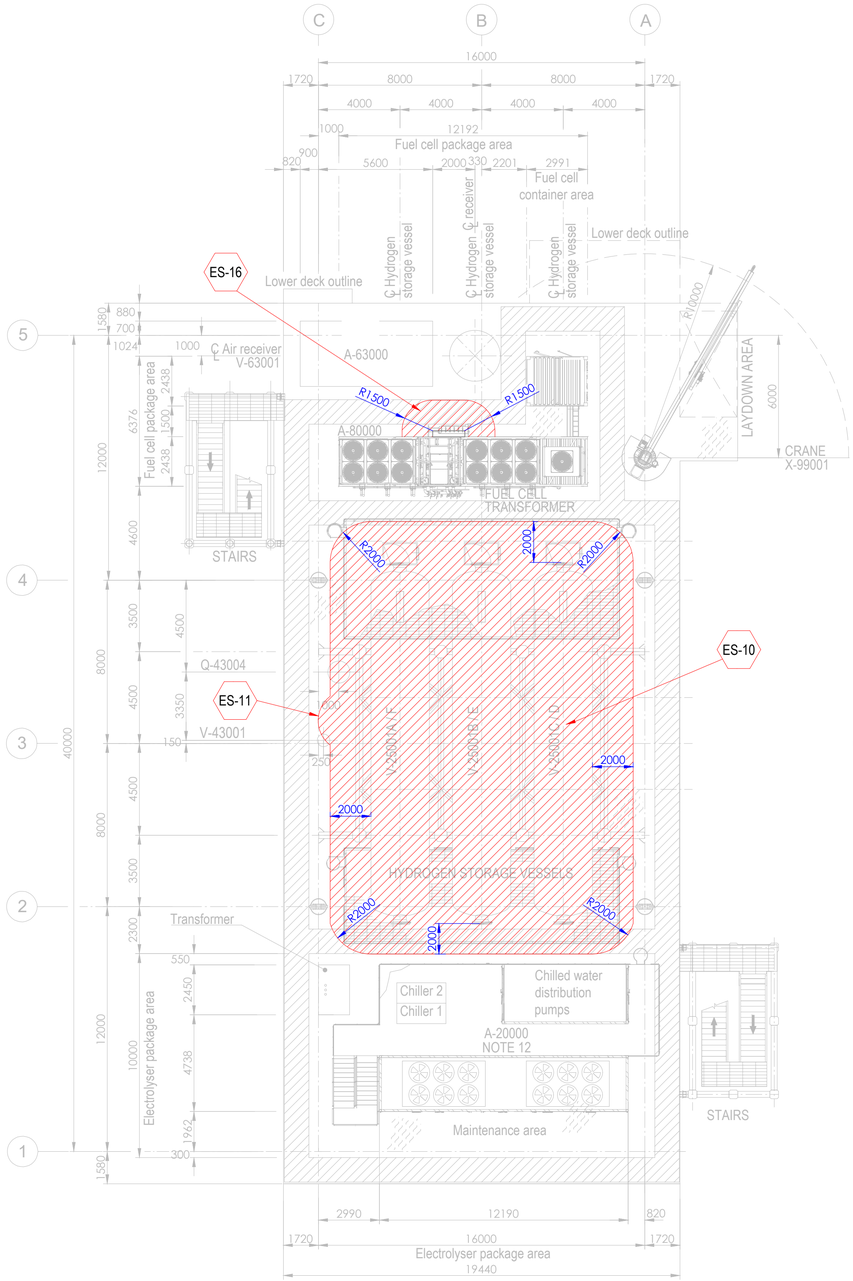
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

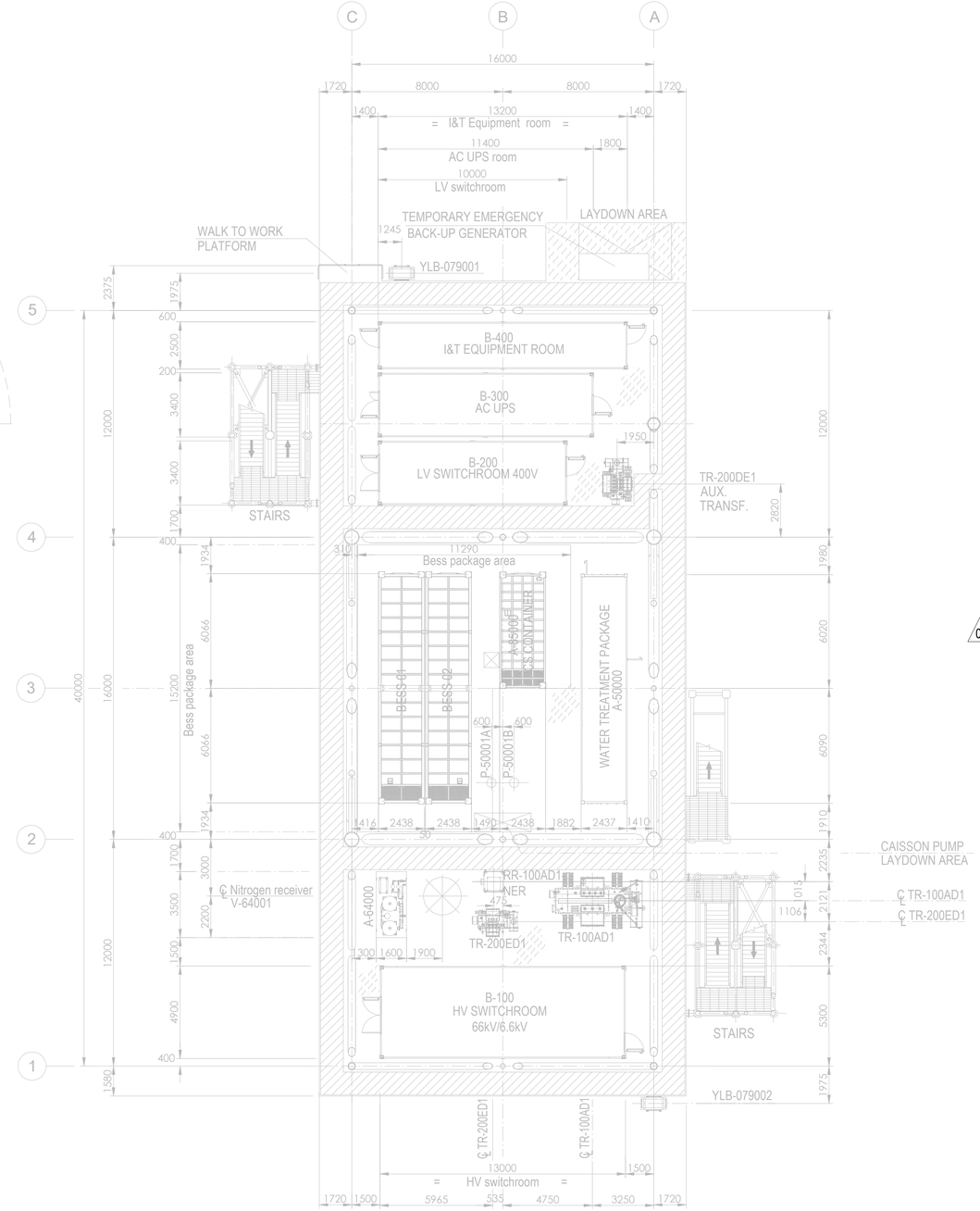
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



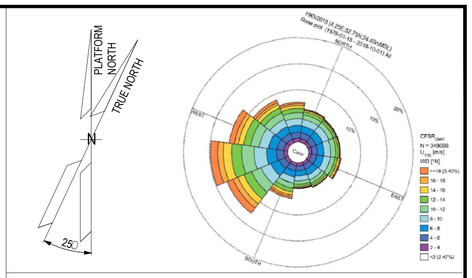
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
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7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

File Name : 123A90-DDL-SAF-DL-30022 Rev.02

ITEM	Tag	25-SV-038	: Air Set Filter	Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10004727	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	FR08411S00SSNB2TRACE 24/1638				
Manufacturer	SITECNA			**Model**	FR04				
Cert No.	D.o.C. by Manufacturer TRACE 24/1638			**Equipment Ambient Temp.**	-20 °C to + 40 °C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-SV-038	: Air Set Filter			Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004727		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	NA	
36	No undue accumulation of dust and dirt	x	NA	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	25-SV-038	: Air Set Filter		Dwg	123A90-FDL-PP-DI-00093-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10004727	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

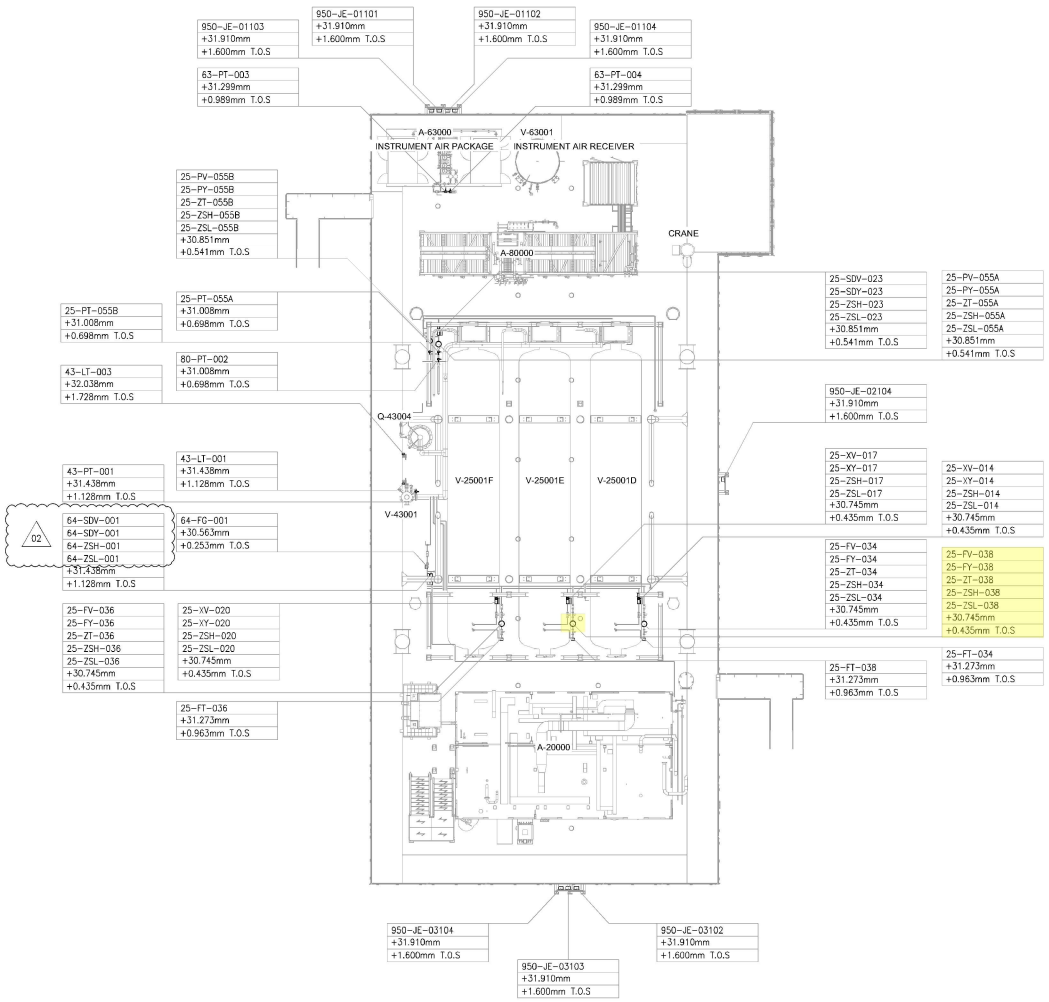
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-01-25	2025-01-30	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-25T13:59:55.678Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-30T17:04:22.994Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

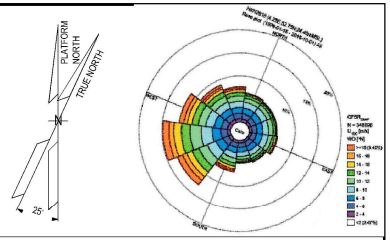
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

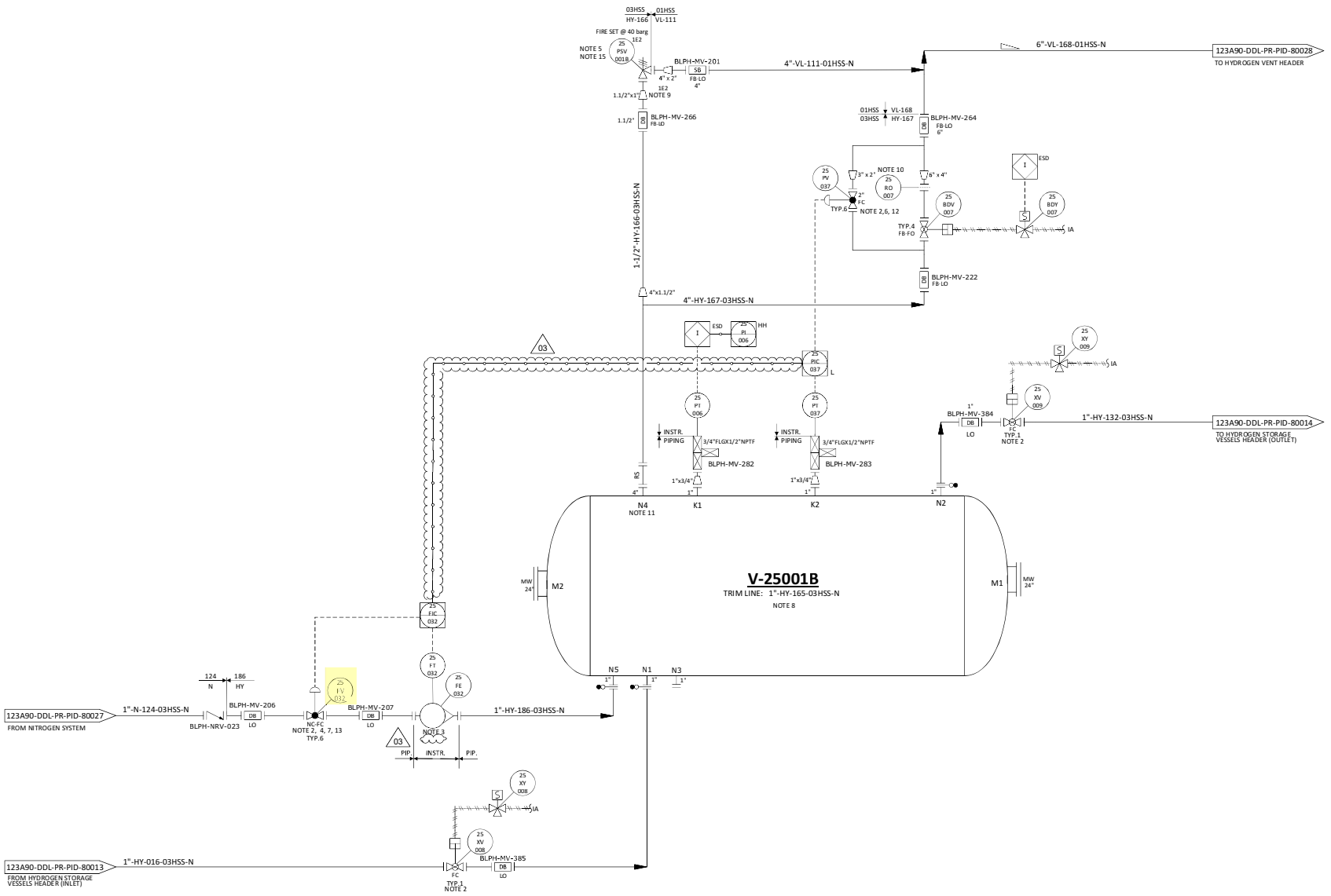
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_B

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-032) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-037 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC."PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-037 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-032 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-037 HAS FAILED TO CLOSE.
15. 25-PSV-001B SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

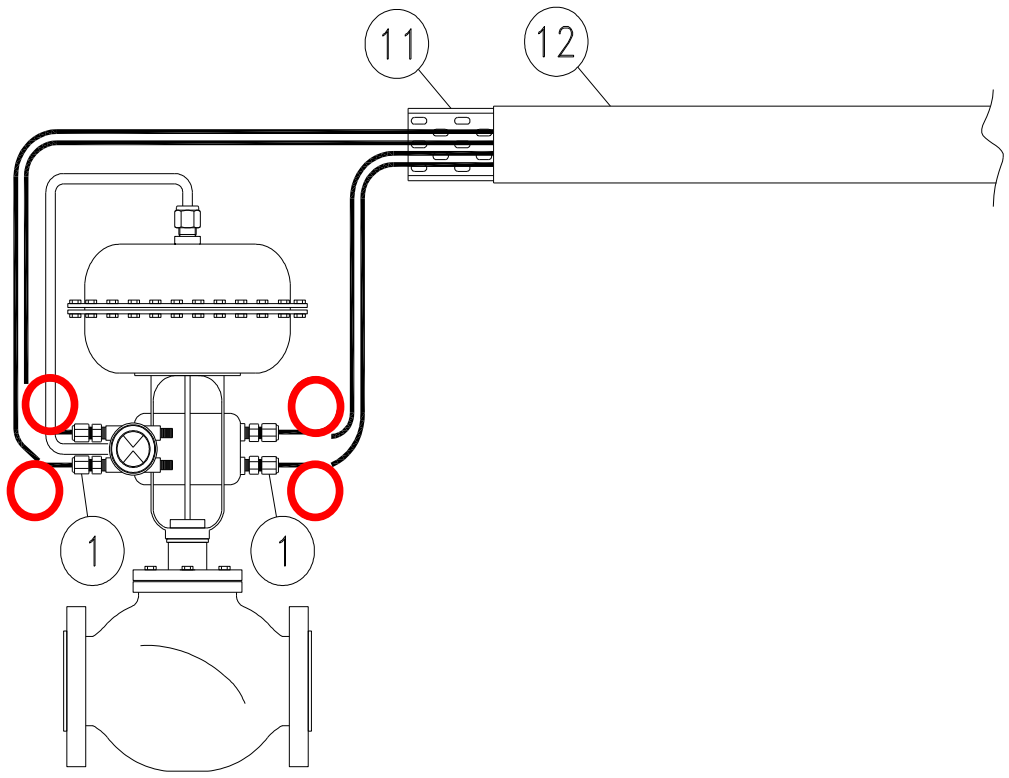
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL B

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80016		SHEET 001 / REV. 03

File Name : FILE_NAME

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
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NOTE:

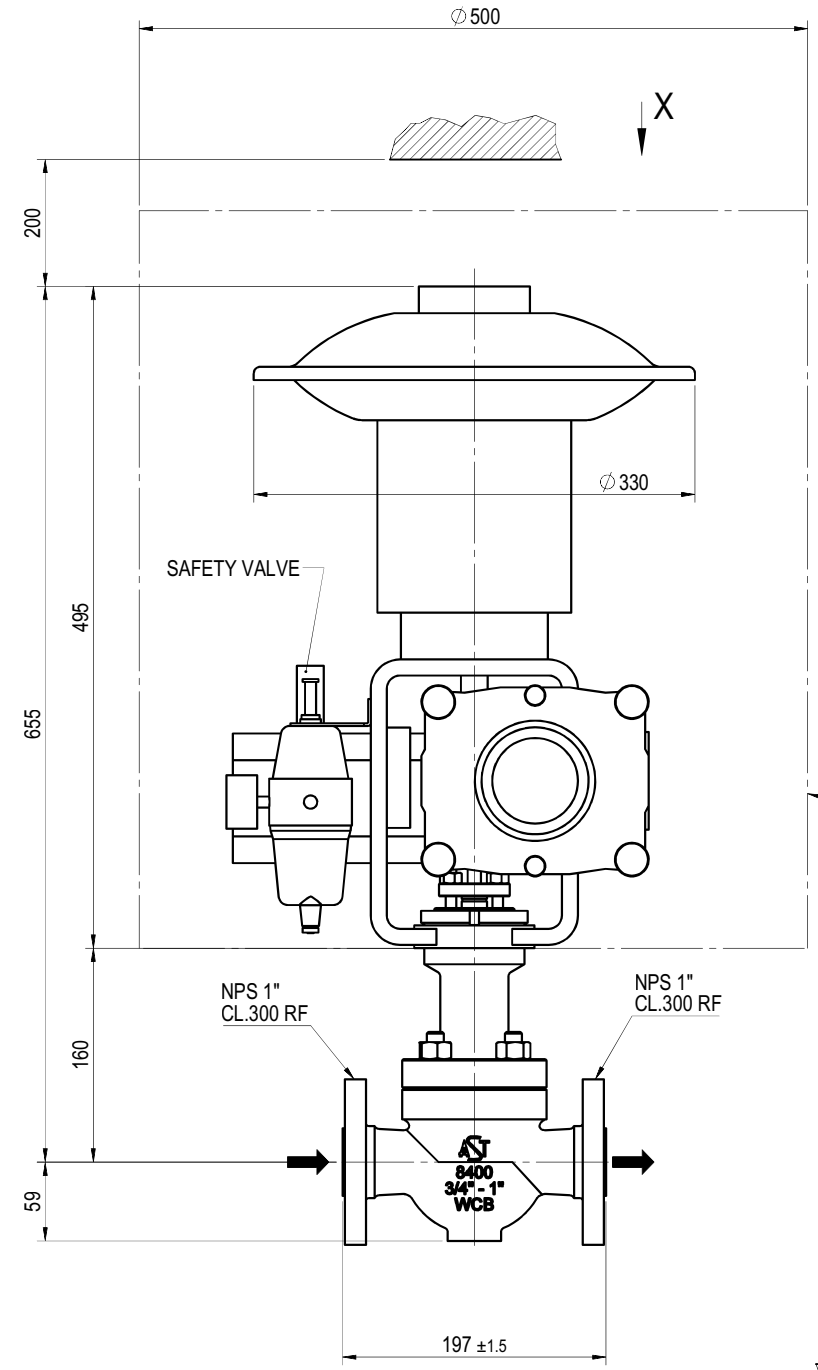
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

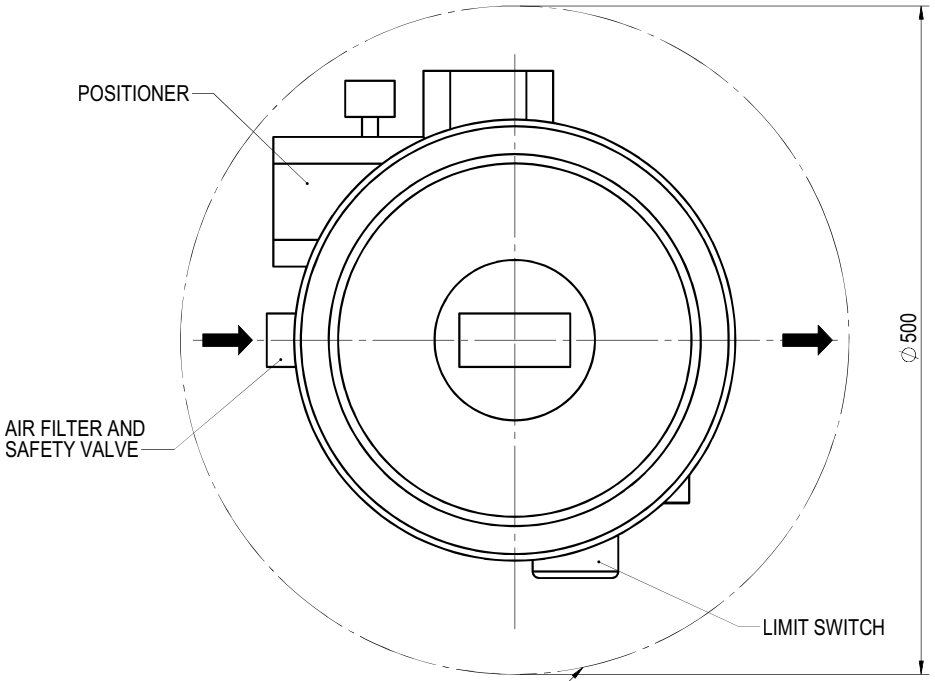
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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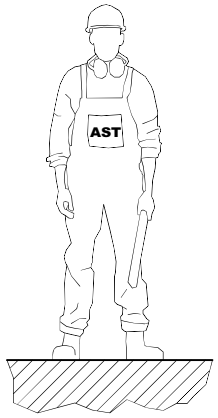
UPPER VIEW FROM "X"



MAXIMUM ACCESSORIES
OVERALL DIMENSION

POSITIONER ON BACK SIDE

MASS:
VALVE= ~ 12 kg
ACTUATOR= ~ 28 kg
TOTAL= ~ 40kg



General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-FV-031, 25-FV-032, 25-FV-033, 25-FV-034, 25-FV-036, 25-FV-038
Matricole / Serials	2400583, 2400584, 2400585, 2400586, 2400587, 2400588

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale

Mass kg

CR 00298

NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 1" PORT 1/4" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0100OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (MI) - Tel.02 934848.1 - Control valve division

GENERAL	1	Tag Number	P&ID Number			25-FV-038		123A90-DDL-PR-PID-80019	
	2	Service				NITROGEN FROM NITROGEN SYSTEM (U-64000) TO HYDROGEN STORAGE VESSEL (V-25001E)			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			1"-HY-189-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312 Gr.TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			NITROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 barg		100 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	17	Flow Rate (Gas)				Nm^3/h		40	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg		7	
	20	Pressure Drop				bar		max 7 - min 4	
	21	Inlet Temperature				°C		15	
	22	Inlet Density / Specific Gravity				kg/m^3		9.3	
	23	Inlet Compressibility Factor				-		0.99	
	24	Inlet Viscosity				cP		0.017	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-		1.4	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-		28	
CALCULATED RESULTS	28	Flow Coefficient Cv						0.3678 / 0.3846	
	29	Travel				75.6%			
	30	Sound Pressure Level				77.27 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HS03C02RFH)			
	33	Body Size	Trim Size			1"		1/4"	
	34	Rated Cv	Characteristics.			0.85		Equal% (11)	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 36L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				PTFE (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured (12, 13)			
	44	Rated Travel				13mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 1 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 14 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

ACTUATOR	50	MFR	Model	AST	SD11R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		15-30 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	(*)	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 15 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-SV-038	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-SV-040	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-SV-043	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-SV-046	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-SV-049	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SV-055A	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SV-055B	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-XV-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XV-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-XV-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-XV-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-XV-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-XV-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-XV-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-XV-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-XV-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-XV-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5
25-XV-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-XV-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XV-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-XY-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XY-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-XY-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-XY-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-XY-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-XY-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-XY-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-XY-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-XY-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-XY-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5
25-XY-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-XY-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XY-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSH-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSH-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSH-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSH-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-ZSH-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSH-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-ZSH-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSH-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-ZSH-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSH-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5

SITECNA®
Flow Control Technologies

Trace No: 24/1638

Dichiarazione di conformità UE
In accordo con la Direttiva Europea 2014/34/UE

EU-Declaration of Conformity
In accordance with Directive 2014/34/EU

Noi, Sitecna Srl, dichiariamo che i seguenti prodotti / Sitecna Srl declares that the following equipment:

Filter regulator model/ filtro regolatore modello: FR04411S00SSNB2

Sono conformi alla normativa di armonizzazione dell'Unione / They comply with the Union harmonization legislation:

Direttiva 2014/34/UE ATEX	Direttiva 2014/34/UE del Parlamento europeo e del Consiglio, del 26 febbraio 2014, concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva (rifusione) Testo rilevante ai fini del SEE.
	Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast) Text with EEA relevance.

Secondo le seguenti Norme di riferimento / As per folowing reference Normative Documents:

EN ISO 80079-36:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive - Metodo di base e requisiti
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Basic method and requirements
EN ISO 80079-37:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive – Tipo di protezione non elettrica per sicurezza costruttiva "c", per controllo della sorgente di accensione "b", per immersione in liquido "k"
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"
N 1127-1:2019	Atmosfere esplosive - Prevenzione dell'esplosione e protezione contro l'esplosione - Concetti fondamentali e metodologia
	Explosive atmospheres - Explosion prevention and protection - Basic concepts and methodology

Ai sensi della Direttiva 2014/34/EU, i prodotti sopra indicati riportano la seguente marcatura / According to the Directive 2014/34/EU, above mentioned products reports the following marking:

II 2G Ex h IIC T6/T5 Gb X
II 2D Ex h IIIC T85°C/T100°C Db X

Inoltre, ai sensi della direttiva 2014/34/UE, i prodotti sopra menzionati sono oggetto, per gli aspetti relativi sia alla progettazione sia alla fabbricazione, al controllo interno di fabbricazione (Allegato VIII – Modulo A). **Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.**
In conformity to Directive 2014/34/EU, the afore mentioned equipment, regarding their design and production, are object to internal manufacturing check (Attachment VIII – Module A**). Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.**

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.
This declaration of conformity is issued under exclusive responsibility of the manufacturer.

Milan, 25/10/2024
Davide Matteo De Corrado
Managing Director

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NR MECC. MI253803
C.C.I.A.A. 1259759

INSTALLATION, REGULATION & MAINTENANCE INSTRUCTIONS

AISI316 and Aluminium Filter, Regulator, Filter-regulator - 1 1/2", 2"NPT

IP66

SITECNA Flow Control Technologies

1.INTRODUCTION

Throughout this manual there are a number of HAZARD WARNINGS that must be read and adhered to in order to prevent possible personal injury and/or damage to equipment. Three signal work "DANGER", "WARNING" and "CAUTION" are used to indicate the severity of a hazard, and are preceded by the safety alert symbol.

⚠Danger Denotes the most serious hazard and is used when serious injury or death WILL result from misuse or failure to follow specific instructions.

⚠Warning Used when serious injury or death MAY result from misuse or failure to follow specific instructions.

⚠Caution Used when injury or product/equipment damage may result from misuse or failure to follow specific instructions.

⚠Caution **⚠Warning** **⚠Danger** It is the responsibility and duty of all personnel involved in the installation, operation and maintenance of the equipment on which this device is used, to fully understand the procedures by which hazards can be avoided.

The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Only personnel with appropriate training should operate machinery and equipment.

Do not service or attempt to remove the machinery or equipment until safety is confirmed.

2.DESCRIPTION

Before you can feed a plant with a gaseous fluid, it must be processed to remove contaminants such as water and oil particles, dirt and is also necessary to reduce the pressure to the level required by the equipment downstream.

- Filters are designed to remove airborne solid and liquid contaminants which may plug small orifices and hinder performance or cause excessive wear and premature equipment failure.
- Regulators provide controlled, consistent air pressure as required for specific pneumatic equipment connected to the air system.
- Filter/regulators are designed to remove airborne solid and liquid contaminants which may plug small orifices and hinder performance or cause excessive wear and premature equipment failure. In addition to filtration the regulators portion provides controlled, consistent air pressure as required for specific pneumatic equipment connected to the air system

3. OPERATION

In these devices, the main spring (5) exerts a force on a diaphragm assembly (6-10). This force can be adjusted by turning the adjustment screw (1). By readjusting the main spring, the regulator valve assembly (16,17,18,39) is pushed down and the seat of the lower seal is released, while the front side of the adjusting piston continues to be sealed by the element sealing in the diaphragm. This allows the flow from the pressure to the processing lines for the supply and exhausting of the system. Small pressure fluctuations can be compensated by slight movements of the piston adjustment and changes of the flow on the lower valve seat. If the pressure on the line of work exceeds the set pressure of work, this generates a force on the lower side of the diaphragms that pushes the diaphragm upwards, the air then flows over the sealing element in the diaphragm and through a light of drain on the body of the compressed air regulator.

4. PNEUMATIC DIAGHRAM

Fig.1 Filter Regulator

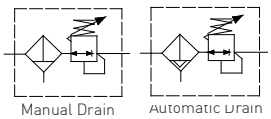


Fig.2 Regulator

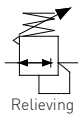


Fig.3 Filter



5. TECHNICAL FEATURES

Medium: compressed air or inert gases, filtered
Port thread: 1 1/2" - 2"NPT
Gauge connection: 1/8" – 1/4"NPT
for FR & F: 5, 25, 40 micron, coalescing (only F)
Max inlet pressure: 20 bar
15 bar (aluminum version for gas usage)
16 bar (only for F, FR with automatic drain)
Drain valve: manual or automatic
Pressure range: 0.2/2, 0.2/4, 0.4/8, 0.4/10 bar
Materials: Body SS316L or aluminum alloy
Filter element SS316
Internal parts stainless steel

MATERIAL		TEMPERATURE		
DIAPHRAGM	SEALS	TRANSPORT	STORAGE	OPERATING
NBR	NBR	-20°C...+80°C	-20°C...+80°C	-20°C...+80°C
FKM	FKM	-25°C...+90°C	-25°C...+90°C	-25°C...+90°C
EPDM	EPDM	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
FVMQ	FVMQ	-60°C...+90°C	-60°C...+90°C	-60°C...+90°C
HNBR	HNBR	-60°C...+90°C	-60°C...+90°C	-60°C...+90°C

6.TRANSPORTATION & STORAGE

The preferred storage location is a clean, dry and protected warehouse. If the components have to be stored outside, precautions should be taken to keep valves clean and dry. For storage temperatures, refer to the table in paragraph "TECHNICAL FEATURS".

To avoid contamination of impurities during the storage period, don't remove thread protection caps; remove them just before the installation phase.

7. INSTALLATION

⚠Warning Before performing any work, read this manual and study all figures. Assure yourself that you understand and can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

Before installing the valve, set and block the machine or equipment in a secure position; close the air shutoff valve and exhaust air from air lines and disconnect all electrical power.

- Upstream of lubricators and cycling valves
- As close as possible to the air supply when used as a main line filter
- As close as possible to the device being serviced when used as a final filter
- **⚠Caution** In the version with automatic drain and with hazardous area medium but compatible with the materials, you must remember that the device is designed with allowable leakage. In the cases, it is necessary to provide for the conveyance of the discharge in safe area. No responsibility will be charged to SITECNA to unsafe use.

8. MOUNTING

- Vertically (bowl down),
- With air flow in direction of arrow on body,
- Connect piping to proper ports using pipe thread sealant on male threads only. Do not allow sealant to enter interior of unit.
- Install a pressure gauge or plug the gauge ports. Gaugeports can also be used as additional outlets for regulated air

9. TESTING

- Before applying inlet pressure to filter/regulator, turn adjustment screw (1) counterclockwise to remove all force on regulating spring (5).
- Apply inlet pressure, then turn adjustment screw (1) clockwise to increase and counterclockwise to decrease outlet pressure setting.
- Always approach the desired pressure from a lower pressure. When reducing from a higher to a lower setting, first reduce to some pressure less than thatdesired, then bring up to the desired pressure.

NOTE

⚠Warning As option is available an "Anti-tamper system" to avoid the un-authorized modification of the setting. This option is mandatory for safety related applications.

⚠Caution With non-relieving filter/regulators, make pressure reductions with some air flow in the system. If made under no flow (dead-end) conditions, the filter/regulator will trap the over-pressure in the downstream line.

- Once required pressure is achieved tighten locknut (2) to lock setting.

10. MAINTENANCE

⚠Warning Before performing any work, read this manual and study all figures. Assure yourself that you understand and can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

Before uninstalling the valve, set and block the machine or equipment in a secure position; close the air shutoff valve and exhaust air from air lines; disconnect all electrical power.

- Filter/regulator can be disassembled without removal from air line.
- Shut off inlet pressure. Reduce pressure in inlet and outlet lines to zero.
- Turn adjustment screw fully counter clockwise.
- Disassemble in general accordance with the item numbers on exploded view. Do not remove the drains unless replacement is necessary. Remove and replace drains only if they malfunction.

A.Ordinary maintenance

⚠Caution The FR, F and R should be periodically checked for proper functioning:

- Clean the FR, F and R from impurities and dirt;
- Visually check of the integrity of the body and cup
- Check that there aren't leakages;
- Check the correct functionality of the FR, F and R;
- For manual drain models, regularly open drain to expel accumulated liquids. Keep liquids below filter element (21);
- At approximately 6 month intervals it is advisable to remove the bowl assembly and unscrewing the filter element (21) for inspection;
- Clean or replace filter element when dirty.

B. Troubleshooting

Issue	Possible Cause	Fixes
leakage between body and lower cup for FR, F, R	Seal damage	replace the o-ring (25) or contact SITECNA technical support for more information
no adjustment pressure for FR and R	Diaphragm or valve damaged	replace diaphragm assembly (6-10) and valve assembly (16,17,18,39) or contact SITECNA technical support for more information
pressure drop reaches or exceeds 10psig (0.7bar)	dirty filter element	replace filter element (21) or contact SITECNA technical support for more information

After replacing repeat the "TESTING" phase

C. Assembly

- Lubricate threads and nose of adjusting screw (1) at regular intervals with suitable grease.
- Lubricate seals (17) with light coat of good quality grease.
- Assemble the unit as shown on the exploded view.

11. MARKING ACORDING TO 2014/34/UEAtex

Ex II 2G Ex h IIC T6/T5 Gb X
II 2D Ex h IIIC T85°C/T100°C Db X

For using these equipment in potentially explosive atmospheres, it is recommended - for the installation and the maintenance operation - to use tools and instruments that can produce only a single spark (for instance: screwdrivers, spanners). Avoid use of tools that can produce sparks like disk saw or grinder

Action must be taken to put to earth the units through a suitable connection, checking that all the metal components (fittings and pipe line) have to be equitable potential.

Equipment have to be installed in the corresponding zone according to the marking.

NOTE: special conditions for safe use (X conditions)

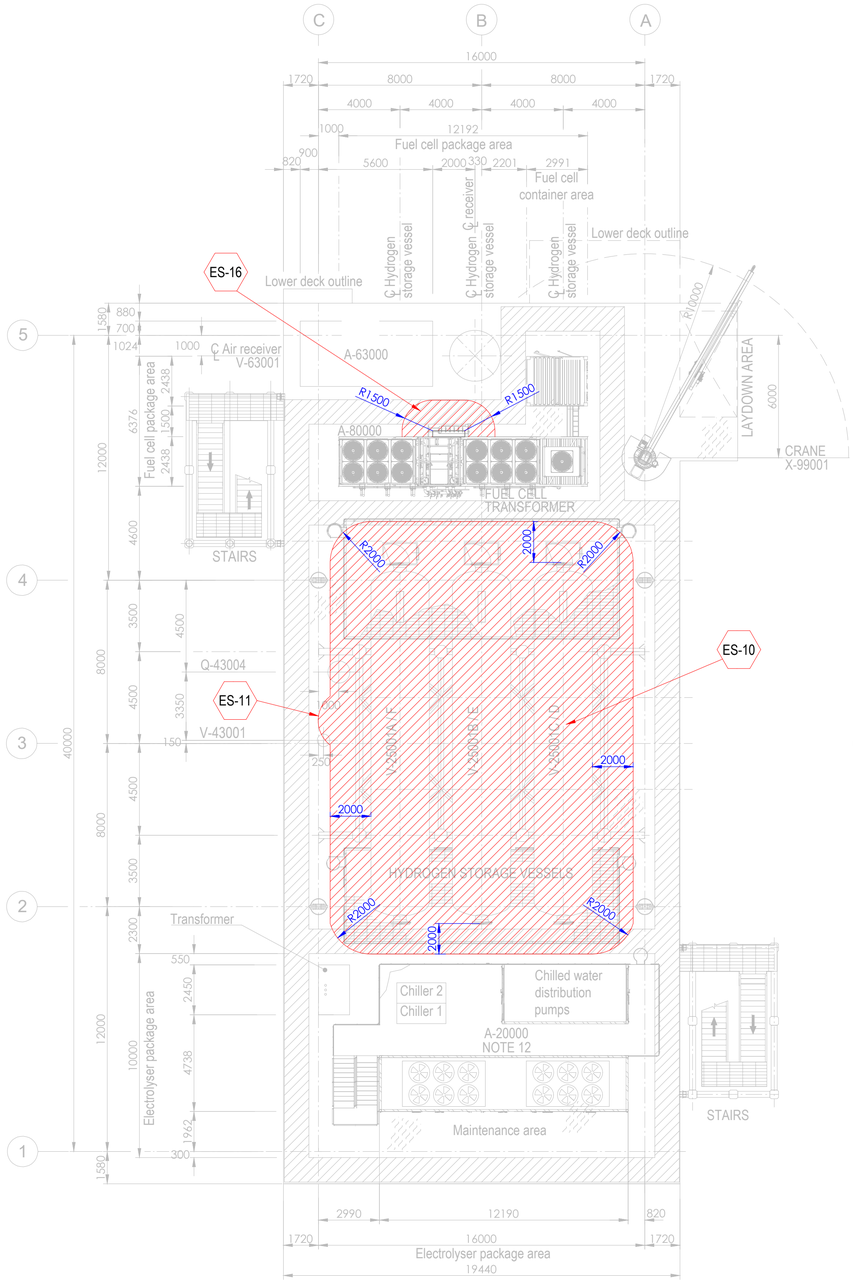
Before performing any work, read this manual and assure yourself you understand. X at the end of ATEX sobstitutes T amb depending on used seales based on the following corrispondance:

Series VB, EP, VSR, LK04: NBR=-20°C+80°C, FMK=-25°C+90°C, EPDM= -40°C+80°C, FVMQ & HNBR= -60°C+90°C
Series: DP, RF, LK08, TF: NBR=-20°C+80°C, FMK=-25°C+90°C, EPDM= -40°C+80°C, FVMQ & HNBR= -55°C+90°C
Serie FP: -30°+180°C / Series SLHF, SLVP, SLSC: -55°C+150°C
Serie PV, PVSL: -20°C +80°C / Serie SCLP: 2°C+80°C
Serie FLGS: -20°C+90°C / Serie VS: -50°C+230°C

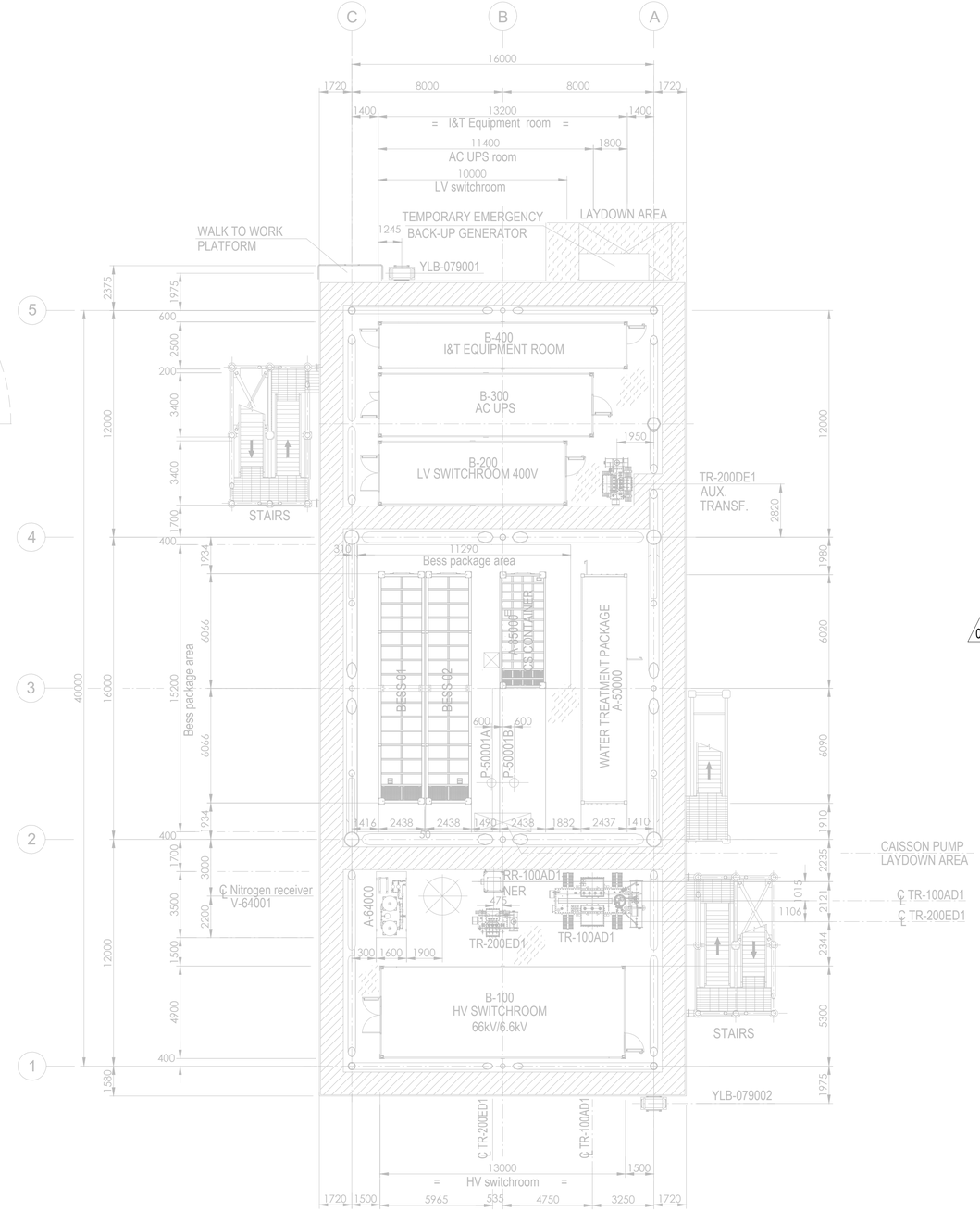
Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583	Declaration of Conformity By AST_ATEX- SN "2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584	Declaration of Conformity By AST_ATEX- SN "2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585	Declaration of Conformity By AST_ATEX- SN "2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586	Declaration of Conformity By AST_ATEX- SN "2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587	Declaration of Conformity By AST_ATEX- SN "2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588	Declaration of Conformity By AST_ATEX- SN "2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589	Declaration of Conformity By AST_ATEX- SN "2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590	Declaration of Conformity By AST_ATEX- SN "2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591	Declaration of Conformity By AST_ATEX- SN "2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592	Declaration of Conformity By AST_ATEX- SN "2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593	Declaration of Conformity By AST_ATEX- SN "2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594	Declaration of Conformity By AST_ATEX- SN "2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595	Declaration of Conformity By AST_ATEX- SN "2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596	Declaration of Conformity By AST_ATEX- SN "2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597	Declaration of Conformity By AST_ATEX- SN "2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598	Declaration of Conformity By AST_ATEX- SN "2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-046	Air set Pressure Gauge Filter	3"-HY-180-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-049	Air set Pressure Gauge Filter	3"-HY-184-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055A	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055B	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031A	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031B	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-031	Safety Valve	1"-HY-153-03HSS-N	COITECH	SLK	24-03790	CE Ex - II

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



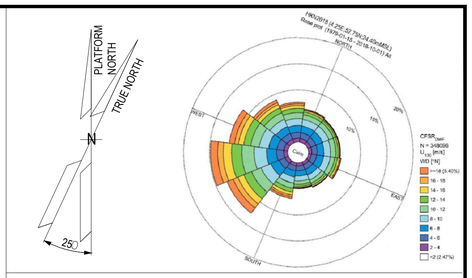
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

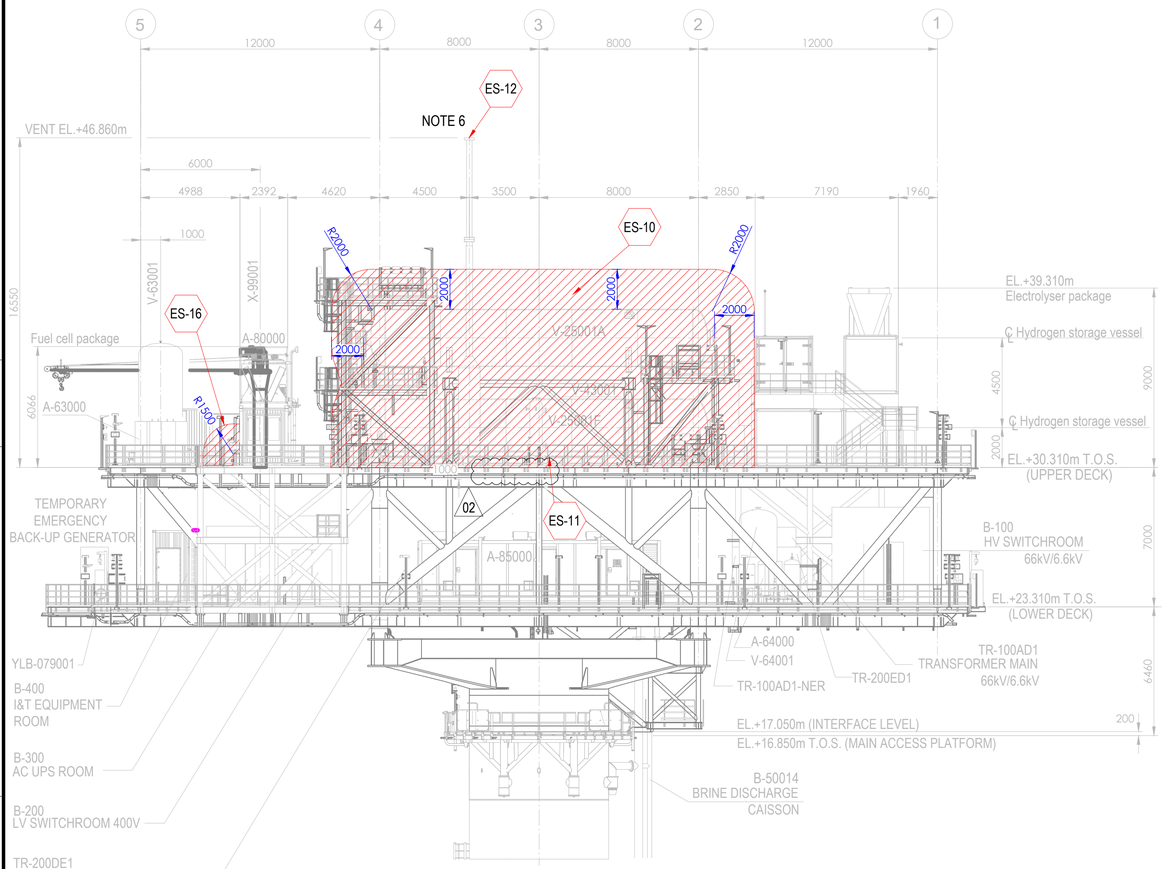
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

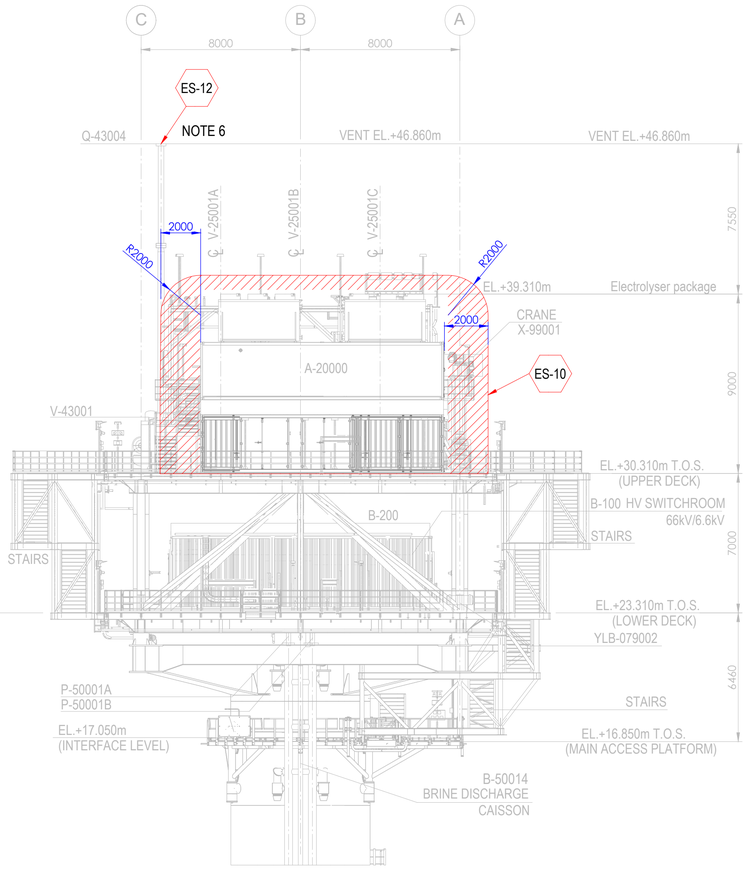
File Name : 123A90-DDL-SAF-DL-30022 Rev.02

DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

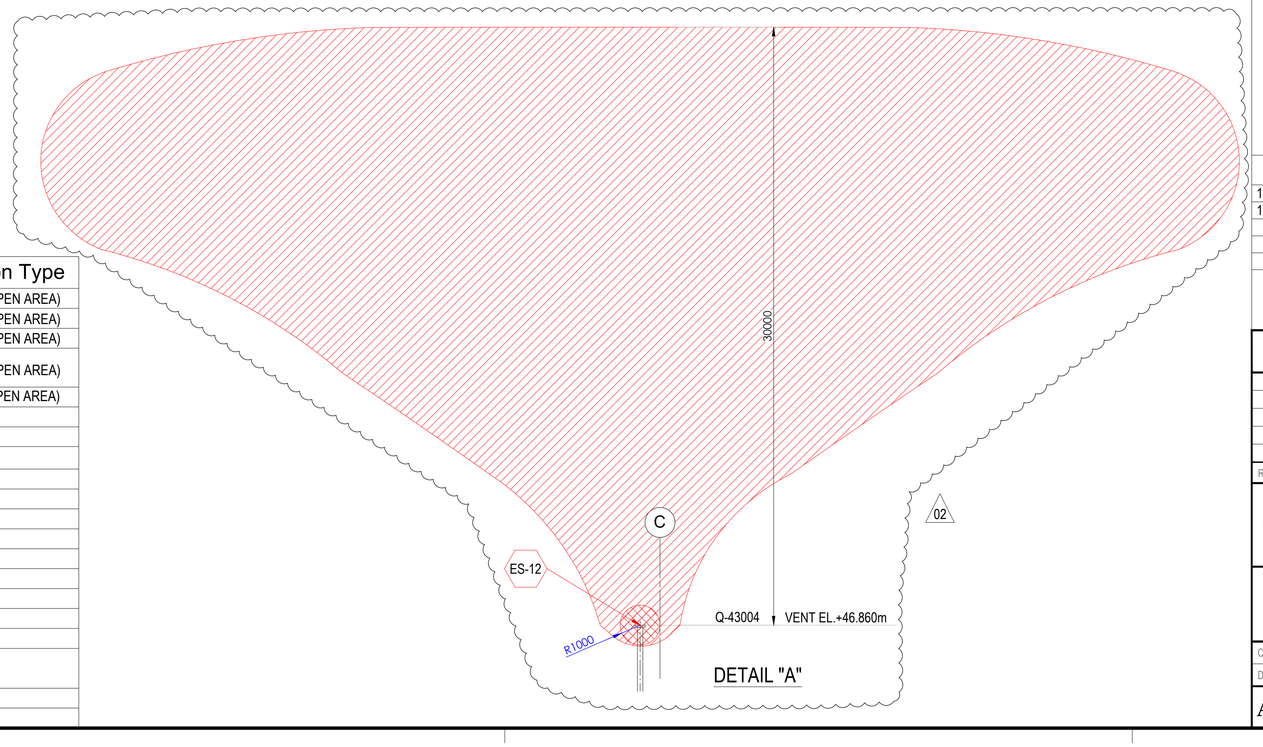


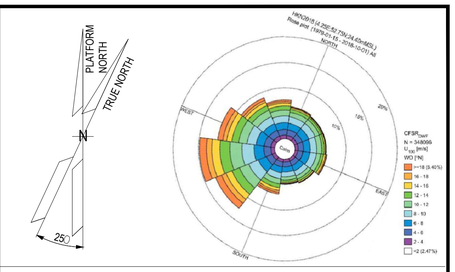
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-SV-046	: Air Set Filter	Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10004732	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		FR08411S00SSNB2 TRACE 24/1638			
Manufacturer	SITECNA			**Model**		FR02			
Cert No.	Declaration of Conformity by Manufacturer TRACE 24/1638			**Equipment Ambient Temp.**		-20 °C to +40 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		OK	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-SV-046	: Air Set Filter			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004732		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-SV-046	: Air Set Filter		Dwg	123A90-FDL-PP-DI-00084-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10004732	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

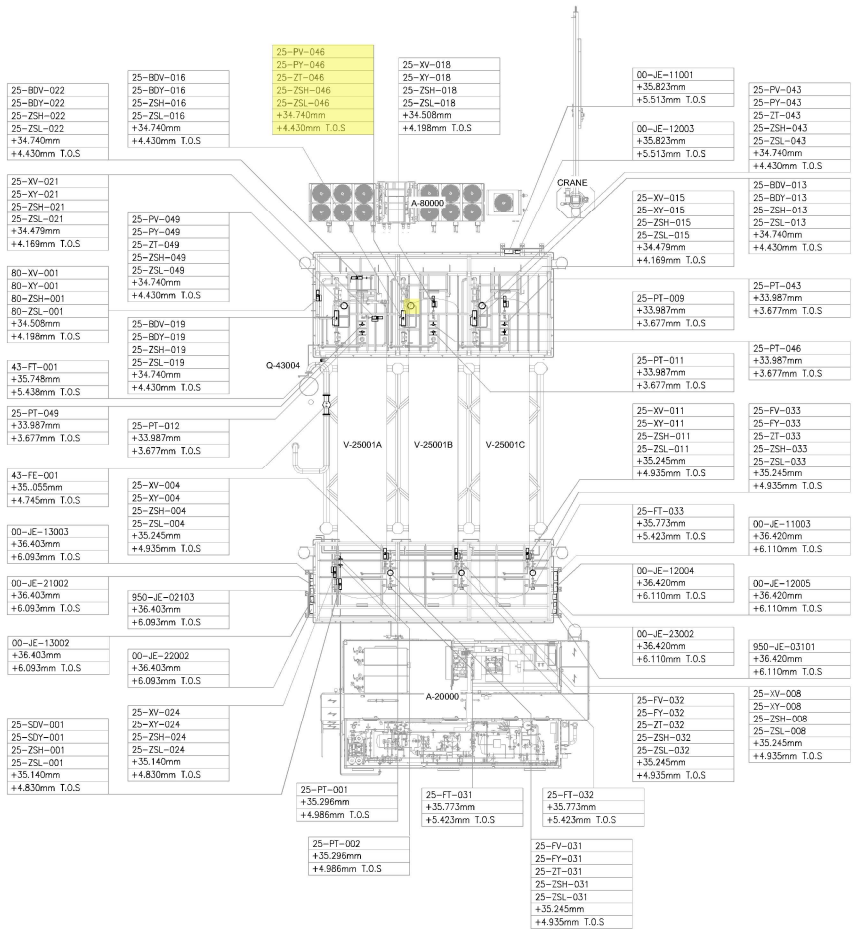
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-15	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-15T14:09:13.887Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-17T15:30:07.477Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

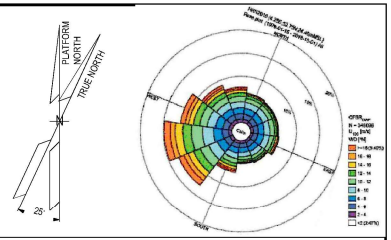
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

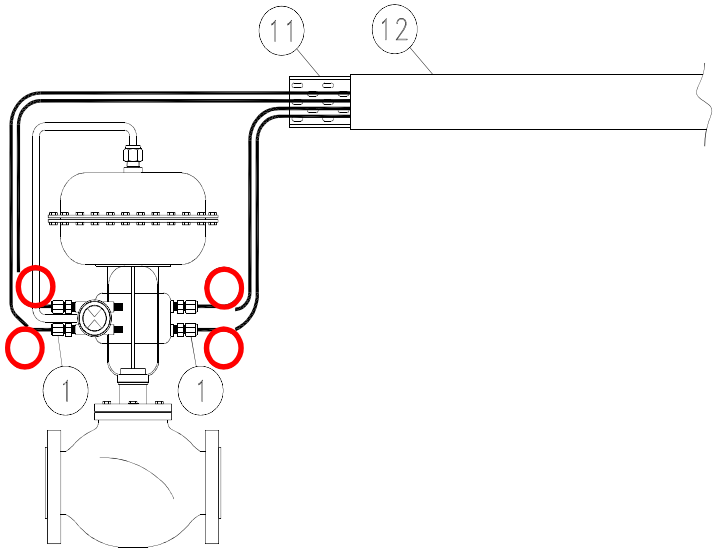
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
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VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_D	13/11/24	G.Randi

ROSETTI MARINO SpA

NOTE:

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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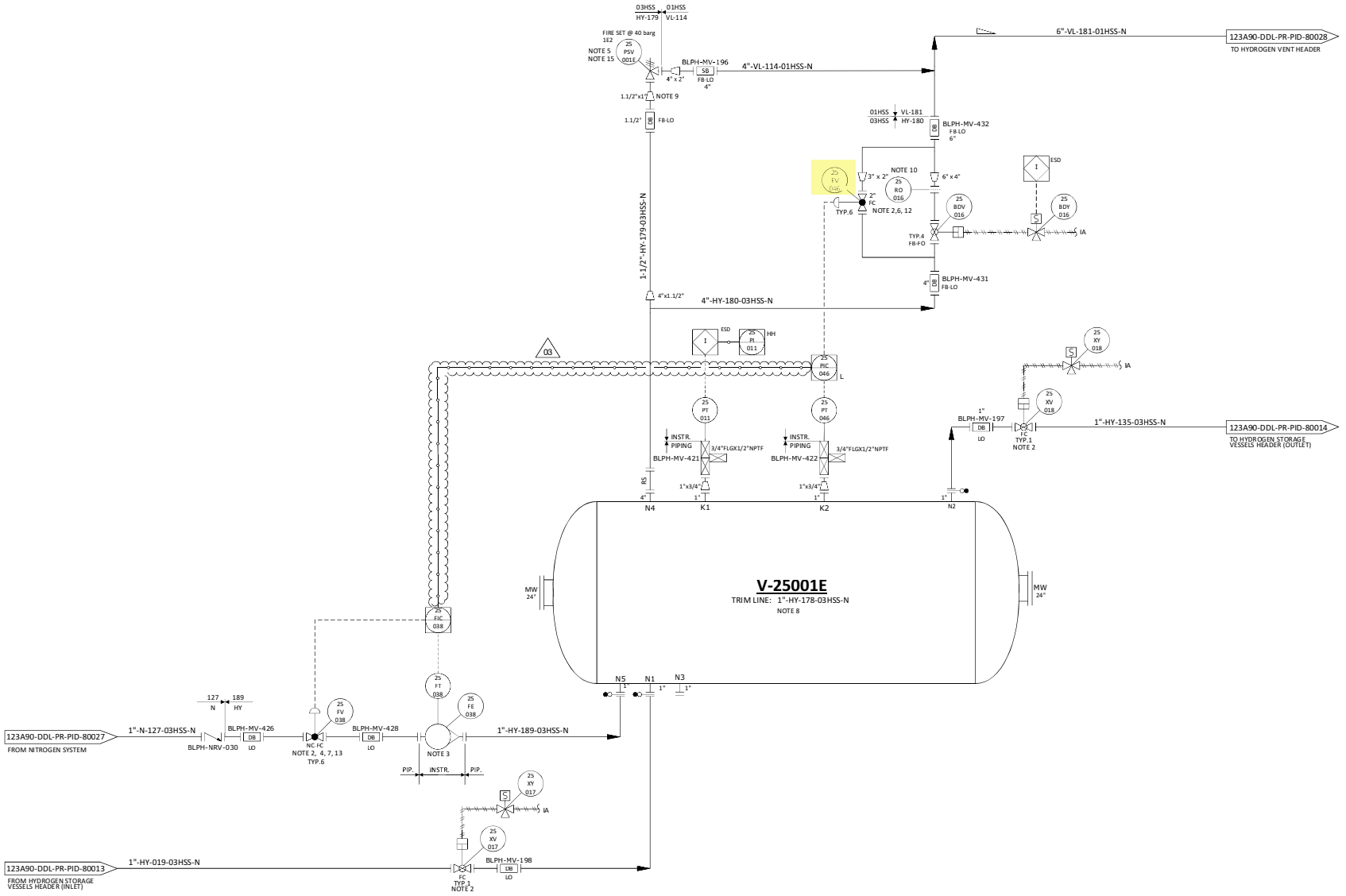
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

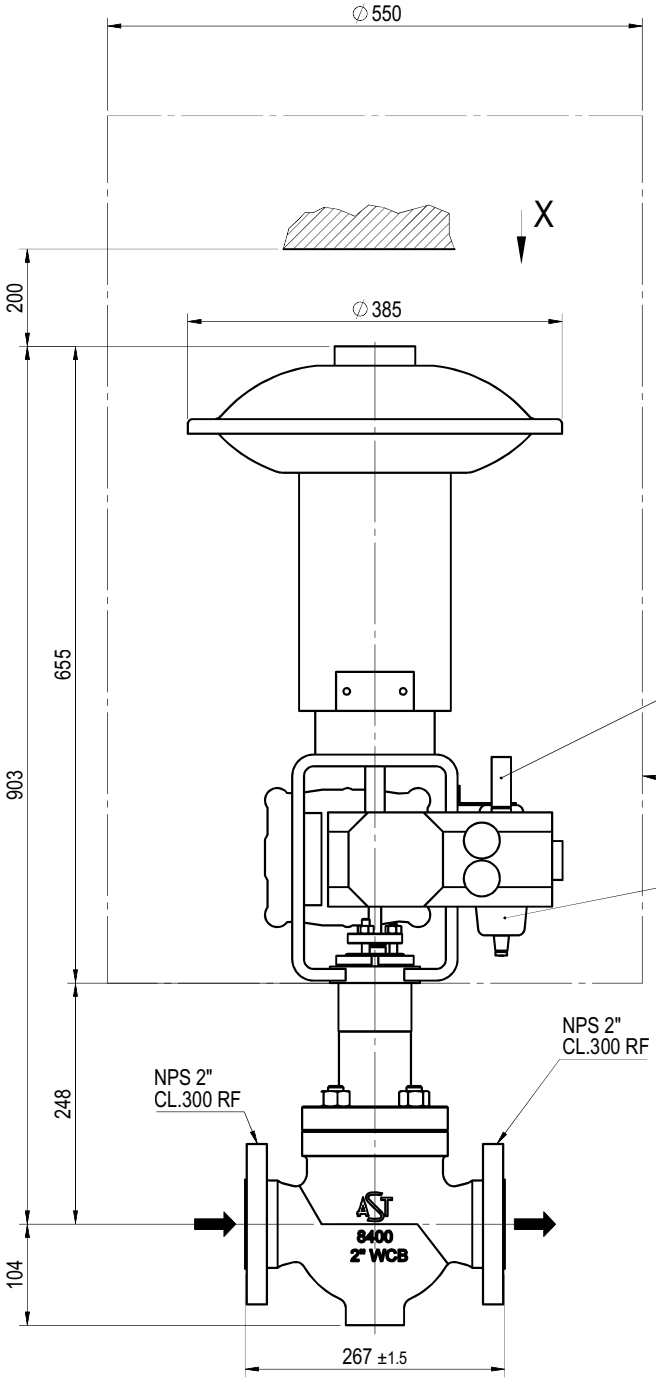
CROSSWIND

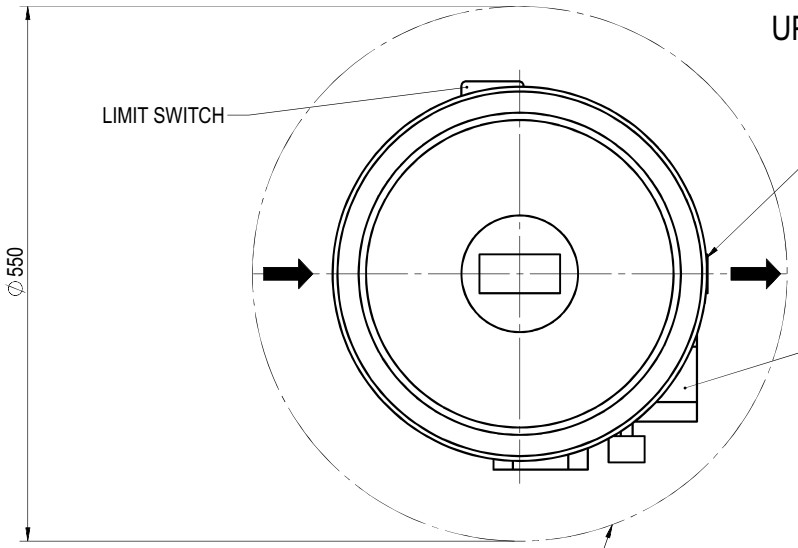
ROSETTI MARINO

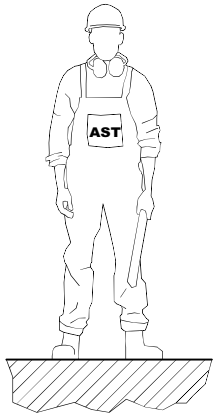
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME







POSITIONER ON FRONT SIDE

MASS:
VALVE= ~ 30 kg
ACTUATOR= ~ 45 kg
TOTAL= ~ 75 kg

General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-PV-035, 25-PV-037, 25-PV-040, 25-PV-043, 25-PV-046, 25-PV-049
Matricole / Serials	2400589, 2400590, 2400591, 2400592, 2400593, 2400594

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale | Mass kg | CR 00299 | NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 2" PORT 1" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0200OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (Mi) - Tel.02 934848.1 - Control valve division

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-SV-038	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-SV-040	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-SV-043	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-SV-046	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-SV-049	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-SV-055A	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-SV-055B	Air set Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638	FR04	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-XV-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XV-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-XV-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-XV-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-XV-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-XV-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-XV-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-XV-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-XV-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-XV-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5
25-XV-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-XV-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XV-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-XY-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XY-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-XY-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-XY-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-XY-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-XY-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-XY-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-XY-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-XY-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-XY-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5
25-XY-020	Vessel V-25001F Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-XY-021	Vessel V-25001F Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-XY-024	Hyrogen to vessels inlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-ZSH-001	Hyrogen to vessels inlet header shut-down	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-ZSH-004	Vessel V-25001A Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSH-006	Vessel V-25001A Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-ZSH-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-008	Vessel V-25001B Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-009	Vessel V-25001B Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_2
25-ZSH-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-011	Vessel V-25001C Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-ZSH-012	Vessel V-25001C Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
25-ZSH-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-ZSH-014	Vessel V-25001D Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-ZSH-015	Vessel V-25001D Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-ZSH-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-ZSH-017	Vessel V-25001E Hydrogen inlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-ZSH-018	Vessel V-25001E Hydrogen outlet	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_2 HAZARDOUS-AREA_5

Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583	Declaration of Conformity By AST_ATEX- SN "2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584	Declaration of Conformity By AST_ATEX- SN "2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585	Declaration of Conformity By AST_ATEX- SN "2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586	Declaration of Conformity By AST_ATEX- SN "2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587	Declaration of Conformity By AST_ATEX- SN "2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588	Declaration of Conformity By AST_ATEX- SN "2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589	Declaration of Conformity By AST_ATEX- SN "2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590	Declaration of Conformity By AST_ATEX- SN "2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591	Declaration of Conformity By AST_ATEX- SN "2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592	Declaration of Conformity By AST_ATEX- SN "2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593	Declaration of Conformity By AST_ATEX- SN "2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594	Declaration of Conformity By AST_ATEX- SN "2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595	Declaration of Conformity By AST_ATEX- SN "2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596	Declaration of Conformity By AST_ATEX- SN "2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597	Declaration of Conformity By AST_ATEX- SN "2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598	Declaration of Conformity By AST_ATEX- SN "2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-046	Air set Pressure Gauge Filter	3"-HY-180-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-049	Air set Pressure Gauge Filter	3"-HY-184-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055A	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055B	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031A	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031B	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-031	Safety Valve	1"-HY-153-03HSS-N	COITECH	SLK	24-03790	CE Ex - II

SITECNA®
Flow Control Technologies

Trace No: 24/1638

Dichiarazione di conformità UE
In accordo con la Direttiva Europea 2014/34/UE

EU-Declaration of Conformity
In accordance with Directive 2014/34/EU

Noi, Sitecna Srl, dichiariamo che i seguenti prodotti / Sitecna Srl declares that the following equipment:

Filter regulator model/ filtro regolatore modello: FR04411S00SSNB2

Sono conformi alla normativa di armonizzazione dell'Unione / They comply with the Union harmonization legislation:

Direttiva 2014/34/UE ATEX	Direttiva 2014/34/UE del Parlamento europeo e del Consiglio, del 26 febbraio 2014, concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva (rifusione) Testo rilevante ai fini del SEE.
	Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast) Text with EEA relevance.

Secondo le seguenti Norme di riferimento / As per folowing reference Normative Documents:

EN ISO 80079-36:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive - Metodo di base e requisiti
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Basic method and requirements
EN ISO 80079-37:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive – Tipo di protezione non elettrica per sicurezza costruttiva "c", per controllo della sorgente di accensione "b", per immersione in liquido "k"
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"
N 1127-1:2019	Atmosfere esplosive - Prevenzione dell'esplosione e protezione contro l'esplosione - Concetti fondamentali e metodologia
	Explosive atmospheres - Explosion prevention and protection - Basic concepts and methodology

Ai sensi della Direttiva 2014/34/EU, i prodotti sopra indicati riportano la seguente marcatura / According to the Directive 2014/34/EU, above mentioned products reports the following marking:

II 2G Ex h IIC T6/T5 Gb X
II 2D Ex h IIIC T85°C/T100°C Db X

Inoltre, ai sensi della direttiva 2014/34/UE, i prodotti sopra menzionati sono oggetto, per gli aspetti relativi sia alla progettazione sia alla fabbricazione, al controllo interno di fabbricazione (Allegato VIII – Modulo A). **Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.**
In conformity to Directive 2014/34/EU, the afore mentioned equipment, regarding their design and production, are object to internal manufacturing check (Attachment VIII – Module A**). Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.**

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.
This declaration of conformity is issued under exclusive responsibility of the manufacturer.

Milan, 25/10/2024
Davide Matteo De Corrado
Managing Director

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NR MECC. MI253803
C.C.I.A.A. 1259759

INSTALLATION, REGULATION & MAINTENANCE INSTRUCTIONS

AISI316 and Aluminium Filter, Regulator, Filter-regulator - 1 1/2", 2"NPT

IP66

SITECNA Flow Control Technologies

1.INTRODUCTION

Throughout this manual there are a number of HAZARD WARNINGS that must be read and adhered to in order to prevent possible personal injury and/or damage to equipment. Three signal work "DANGER", "WARNING" and "CAUTION" are used to indicate the severity of a hazard, and are preceded by the safety alert symbol.

⚠Danger Denotes the most serious hazard and is used when serious injury or death WILL result from misuse or failure to follow specific instructions.

⚠Warning Used when serious injury or death MAY result from misuse or failure to follow specific instructions.

⚠Caution Used when injury or product/equipment damage may result from misuse or failure to follow specific instructions.

⚠Caution **⚠Warning** **⚠Danger** It is the responsibility and duty of all personnel involved in the installation, operation and maintenance of the equipment on which this device is used, to fully understand the procedures by which hazards can be avoided.

The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Only personnel with appropriate training should operate machinery and equipment.

Do not service or attempt to remove the machinery or equipment until safety is confirmed.

2.DESCRIPTION

Before you can feed a plant with a gaseous fluid, it must be processed to remove contaminants such as water and oil particles, dirt and is also necessary to reduce the pressure to the level required by the equipment downstream.

- Filters are designed to remove airborne solid and liquid contaminants which may plug small orifices and hinder performance or cause excessive wear and premature equipment failure.
- Regulators provide controlled, consistent air pressure as required for specific pneumatic equipment connected to the air system.
- Filter/regulators are designed to remove airborne solid and liquid contaminants which may plug small orifices and hinder performance or cause excessive wear and premature equipment failure. In addition to filtration the regulators portion provides controlled, consistent air pressure as required for specific pneumatic equipment connected to the air system

3. OPERATION

In these devices, the main spring (5) exerts a force on a diaphragm assembly (6-10). This force can be adjusted by turning the adjustment screw (1). By readjusting the main spring, the regulator valve assembly (16,17,18,39) is pushed down and the seat of the lower seal is released, while the front side of the adjusting piston continues to be sealed by the element sealing in the diaphragm. This allows the flow from the pressure to the processing lines for the supply and exhausting of the system. Small pressure fluctuations can be compensated by slight movements of the piston adjustment and changes of the flow on the lower valve seat. If the pressure on the line of work exceeds the set pressure of work, this generates a force on the lower side of the diaphragms that pushes the diaphragm upwards, the air then flows over the sealing element in the diaphragm and through a light of drain on the body of the compressed air regulator.

4. PNEUMATIC DIAGHRAM

Fig.1 Filter Regulator

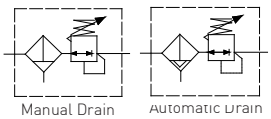


Fig.2 Regulator

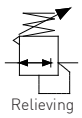


Fig.3 Filter



5. TECHNICAL FEATURES

Medium: compressed air or inert gases, filtered
Port thread: 1 1/2" - 2"NPT
Gauge connection: 1/8" – 1/4"NPT
for FR & F: 5, 25, 40 micron, coalescing (only F)
Max inlet pressure: 20 bar
15 bar (aluminum version for gas usage)
16 bar (only for F, FR with automatic drain)
Drain valve: manual or automatic
Pressure range: 0.2/2, 0.2/4, 0.4/8, 0.4/10 bar
Materials: Body SS316L or aluminum alloy
Filter element SS316
Internal parts stainless steel

MATERIAL		TEMPERATURE		
DIAPHRAGM	SEALS	TRANSPORT	STORAGE	OPERATING
NBR	NBR	-20°C...+80°C	-20°C...+80°C	-20°C...+80°C
FKM	FKM	-25°C...+90°C	-25°C...+90°C	-25°C...+90°C
EPDM	EPDM	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
FVMQ	FVMQ	-60°C...+90°C	-60°C...+90°C	-60°C...+90°C
HNBR	HNBR	-60°C...+90°C	-60°C...+90°C	-60°C...+90°C

6.TRANSPORTATION & STORAGE

The preferred storage location is a clean, dry and protected warehouse. If the components have to be stored outside, precautions should be taken to keep valves clean and dry. For storage temperatures, refer to the table in paragraph "TECHNICAL FEATURS".

To avoid contamination of impurities during the storage period, don't remove thread protection caps; remove them just before the installation phase.

7. INSTALLATION

⚠Warning Before performing any work, read this manual and study all figures. Assure yourself that you understand and can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

Before installing the valve, set and block the machine or equipment in a secure position; close the air shutoff valve and exhaust air from air lines and disconnect all electrical power.

- Upstream of lubricators and cycling valves
- As close as possible to the air supply when used as a main line filter
- As close as possible to the device being serviced when used as a final filter
- **⚠Caution** In the version with automatic drain and with hazardous area medium but compatible with the materials, you must remember that the device is designed with allowable leakage. In the cases, it is necessary to provide for the conveyance of the discharge in safe area. No responsibility will be charged to SITECNA to unsafe use.

8. MOUNTING

- Vertically (bowl down),
- With air flow in direction of arrow on body,
- Connect piping to proper ports using pipe thread sealant on male threads only. Do not allow sealant to enter interior of unit.
- Install a pressure gauge or plug the gauge ports. Gaugeports can also be used as additional outlets for regulated air

9. TESTING

- Before applying inlet pressure to filter/regulator, turn adjustment screw (1) counterclockwise to remove all force on regulating spring (5).
- Apply inlet pressure, then turn adjustment screw (1) clockwise to increase and counterclockwise to decrease outlet pressure setting.
- Always approach the desired pressure from a lower pressure. When reducing from a higher to a lower setting, first reduce to some pressure less than thatdesired, then bring up to the desired pressure.

NOTE

⚠Warning As option is available an "Anti-tamper system" to avoid the un-authorized modification of the setting. This option is mandatory for safety related applications.

⚠Caution With non-relieving filter/regulators, make pressure reductions with some air flow in the system. If made under no flow (dead-end) conditions, the filter/regulator will trap the over-pressure in the downstream line.

- Once required pressure is achieved tighten locknut (2) to lock setting.

10. MAINTENANCE

⚠Warning Before performing any work, read this manual and study all figures. Assure yourself that you understand and can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

Before uninstalling the valve, set and block the machine or equipment in a secure position; close the air shutoff valve and exhaust air from air lines; disconnect all electrical power.

- Filter/regulator can be disassembled without removal from air line.
- Shut off inlet pressure. Reduce pressure in inlet and outlet lines to zero.
- Turn adjustment screw fully counter clockwise.
- Disassemble in general accordance with the item numbers on exploded view. Do not remove the drains unless replacement is necessary. Remove and replace drains only if they malfunction.

A.Ordinary maintenance

⚠Caution The FR, F and R should be periodically checked for proper functioning:

- Clean the FR, F and R from impurities and dirt;
- Visually check of the integrity of the body and cup
- Check that there aren't leakages;
- Check the correct functionality of the FR, F and R;
- For manual drain models, regularly open drain to expel accumulated liquids. Keep liquids below filter element (21);
- At approximately 6 month intervals it is advisable to remove the bowl assembly and unscrewing the filter element (21) for inspection;
- Clean or replace filter element when dirty.

B. Troubleshooting

Issue	Possible Cause	Fixes
leakage between body and lower cup for FR, F, R	Seal damage	replace the o-ring (25) or contact SITECNA technical support for more information
no adjustment pressure for FR and R	Diaphragm or valve damaged	replace diaphragm assembly (6-10) and valve assembly (16,17,18,39) or contact SITECNA technical support for more information
pressure drop reaches or exceeds 10psig (0.7bar)	dirty filter element	replace filter element (21) or contact SITECNA technical support for more information

After replacing repeat the "TESTING" phase

C. Assembly

- Lubricate threads and nose of adjusting screw (1) at regular intervals with suitable grease.
- Lubricate seals (17) with light coat of good quality grease.
- Assemble the unit as shown on the exploded view.

11. MARKING ACORDING TO 2014/34/UEAtex

Ex II 2G Ex h IIC T6/T5 Gb X
II 2D Ex h IIIC T85°C/T100°C Db X

For using these equipment in potentially explosive atmospheres, it is recommended - for the installation and the maintenance operation - to use tools and instruments that can produce only a single spark (for instance: screwdrivers, spanners). Avoid use of tools that can produce sparks like disk saw or grinder

Action must be taken to put to earth the units through a suitable connection, checking that all the metal components (fittings and pipe line) have to be equitable potential.

Equipment have to be installed in the corresponding zone according to the marking.

NOTE: special conditions for safe use (X conditions)

Before performing any work, read this manual and assure yourself you understand. X at the end of ATEX sobstitutes T amb depending on used seales based on the following corrispondance:

Series VB, EP, VSR, LK04: NBR=-20°C+80°C, FMK=-25°C+90°C, EPDM= -40°C+80°C, FVMQ & HNBR= -60°C+90°C
Series: DP, RF, LK08, TF: NBR=-20°C+80°C, FMK=-25°C+90°C, EPDM= -40°C+80°C, FVMQ & HNBR= -55°C+90°C
Serie FP: -30°+180°C / Series SLHF, SLVP, SLSC: -55°C+150°C
Serie PV, PVSL: -20°C +80°C / Serie SCLP: 2°C+80°C
Serie FLGS: -20°C+90°C / Serie VS: -50°C+230°C

GENERAL	1	Tag Number	P&ID Number			25-PV-046		123A90-DDL-PR-PID-80019	
	2	Service				HYDROGEN FROM STORAGE VESSEL (V-25001E) TO HYDROGEN VENT HEADER			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			3"-HY-180-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		3" / 3.05 mm		3" / 3.05 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312/TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			HYDROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 Barg		80 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	N2	H2	
	17	Flow Rate (Gas)				Nm^3/h	40	500	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg	min 1 - max 4	min 1 - max 4	
	20	Pressure Drop				bar	0.7	0.7	
	21	Inlet Temperature				°C	AMB	AMB	
	22	Inlet Density / Specific Gravity				kg/m^3	2.3 - 5.8	0.16 - 0.41	
	23	Inlet Compressibility Factor				-	1	1	
	24	Inlet Viscosity				cP	0.01	0,01	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-	1.3	1.3	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-	28	2	
CALCULATED RESULTS	28	Flow Coefficient Cv					1.719 / 0.9689	5.772 / 3.241	
	29	Travel				80.8%			
	30	Sound Pressure Level				83.01 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HT03C02RFH)			
	33	Body Size	Trim Size			2"		1"	
	34	Rated Cv	Characteristics.			13		(11) Equal%	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				ASTM A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 316L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				Grafite - VF1 (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured Plug (12, 13)			
	44	Rated Travel				25mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

						INSTRUMENT DATASHEET	CROSSWIND	
						Control Valve (Sheet 1 of 2)	ROSETTI MARINO	
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO		Sheet 26 of 37	
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO			
No.	Date	Description	By	Chkd	Appr	Code:	Dwg.No 123A90-DDL-IN-DS-40036	Rev. 01

ACTUATOR	50	MFR	Model	AST	SD13R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		20-44 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	Magnetic	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.
(2) Hydrogen service - Packing ISO 15848-1

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

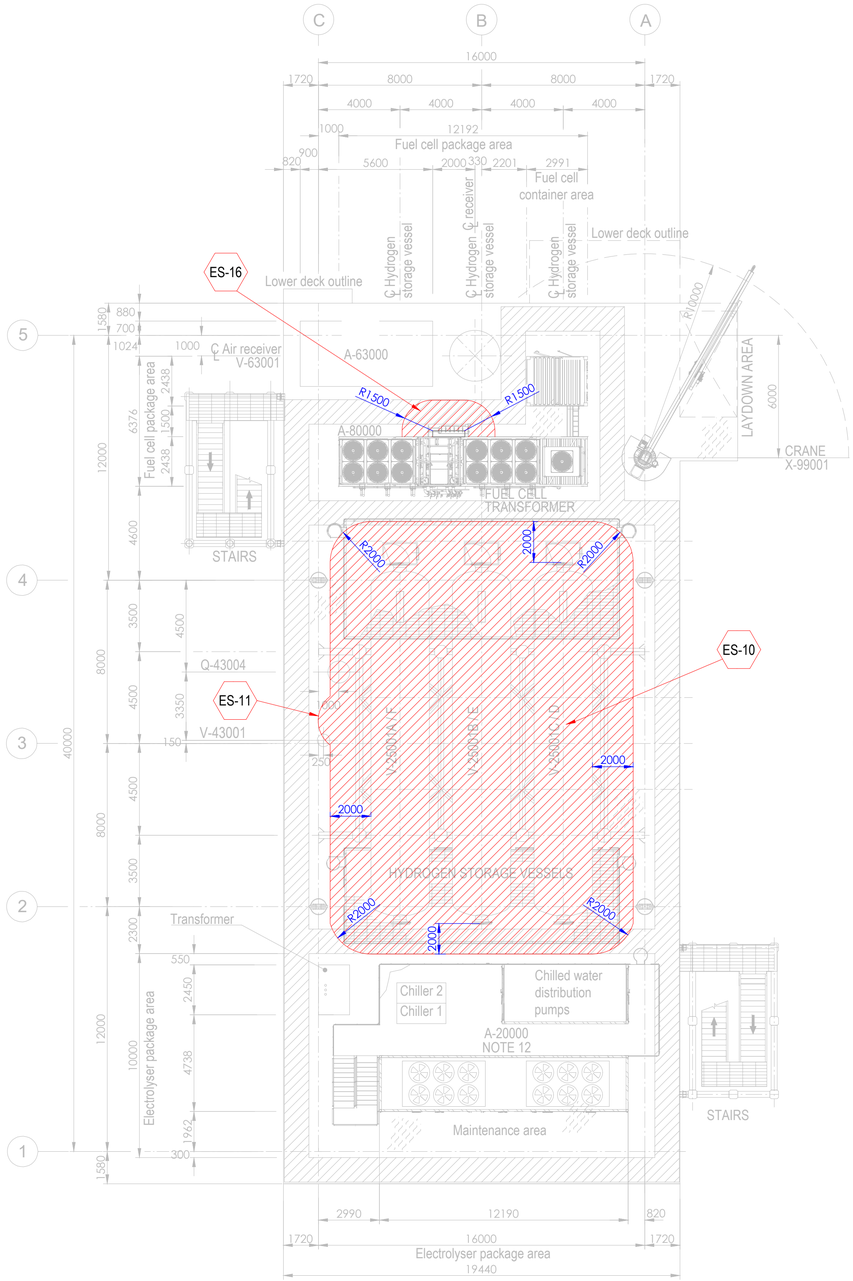
ROSETTI MARINO

Sheet 27 of 37

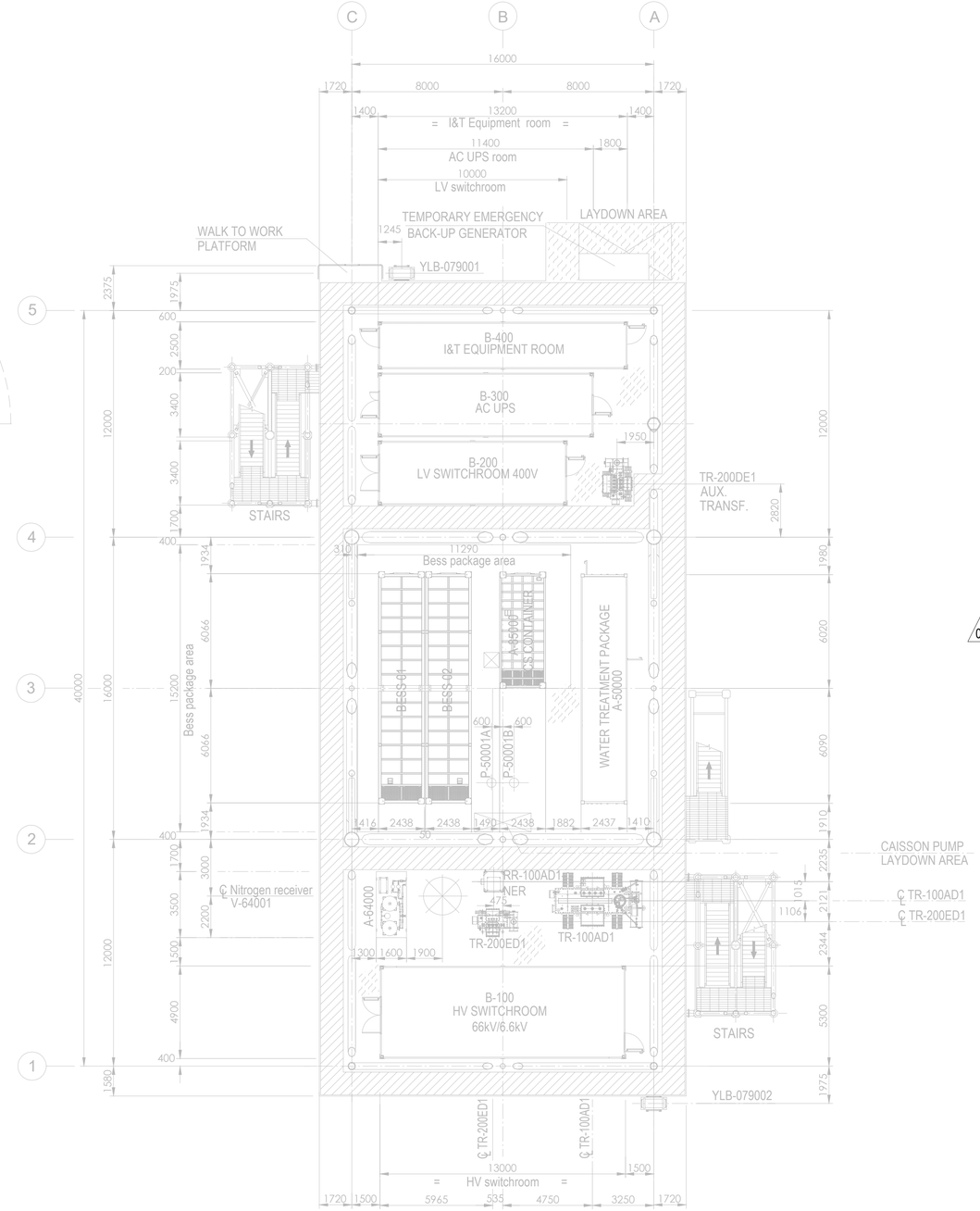
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



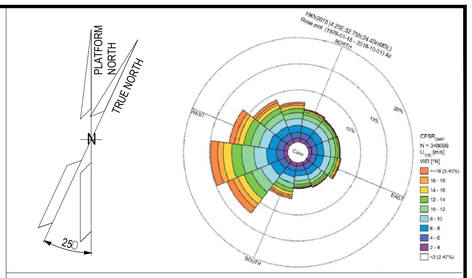
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

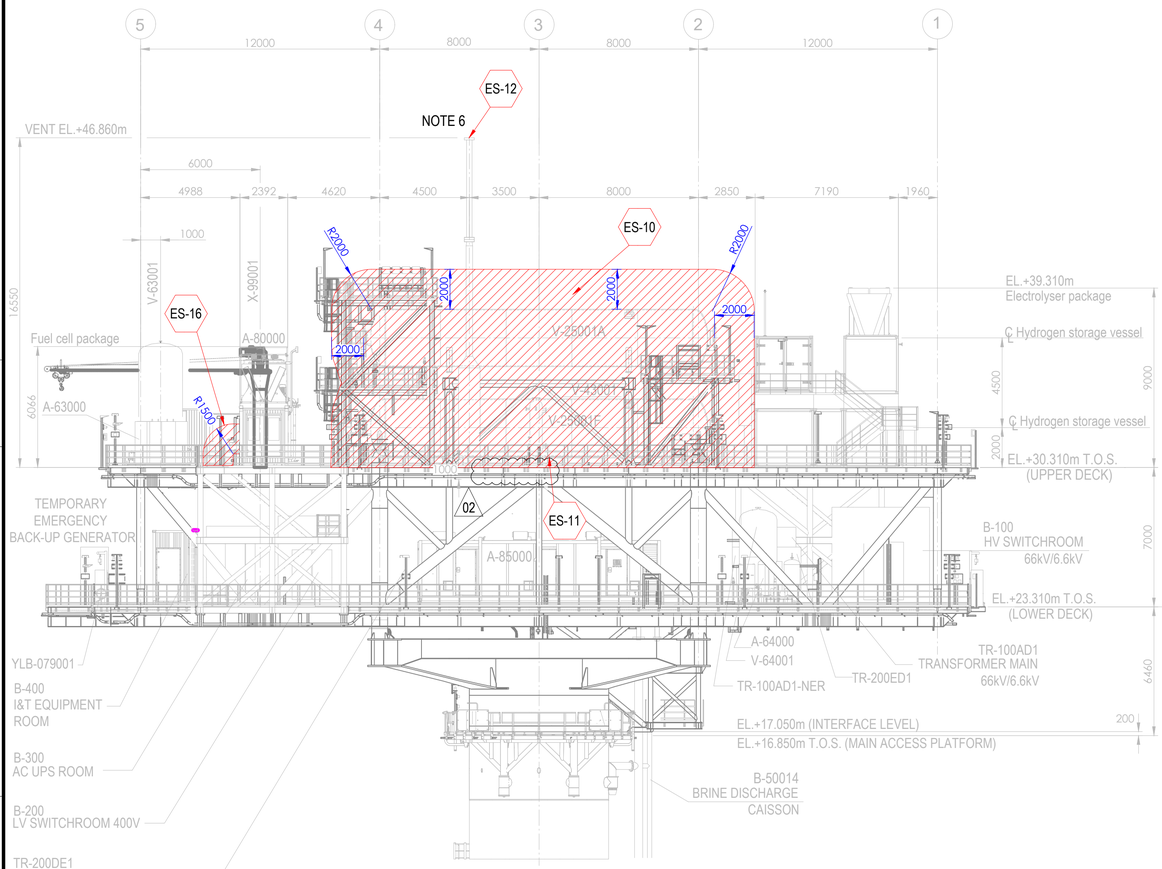
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

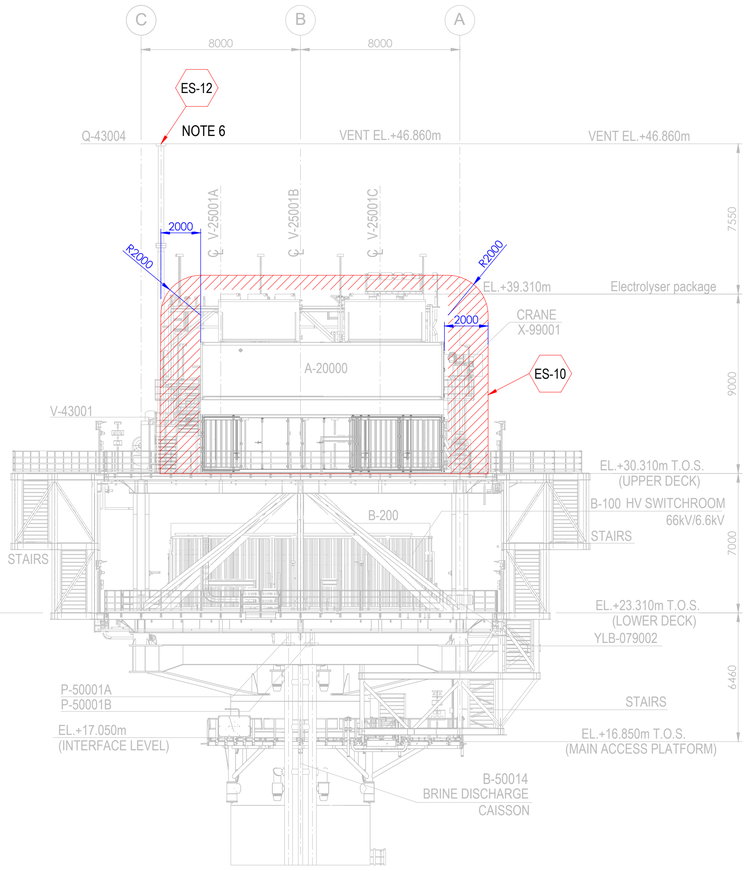
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

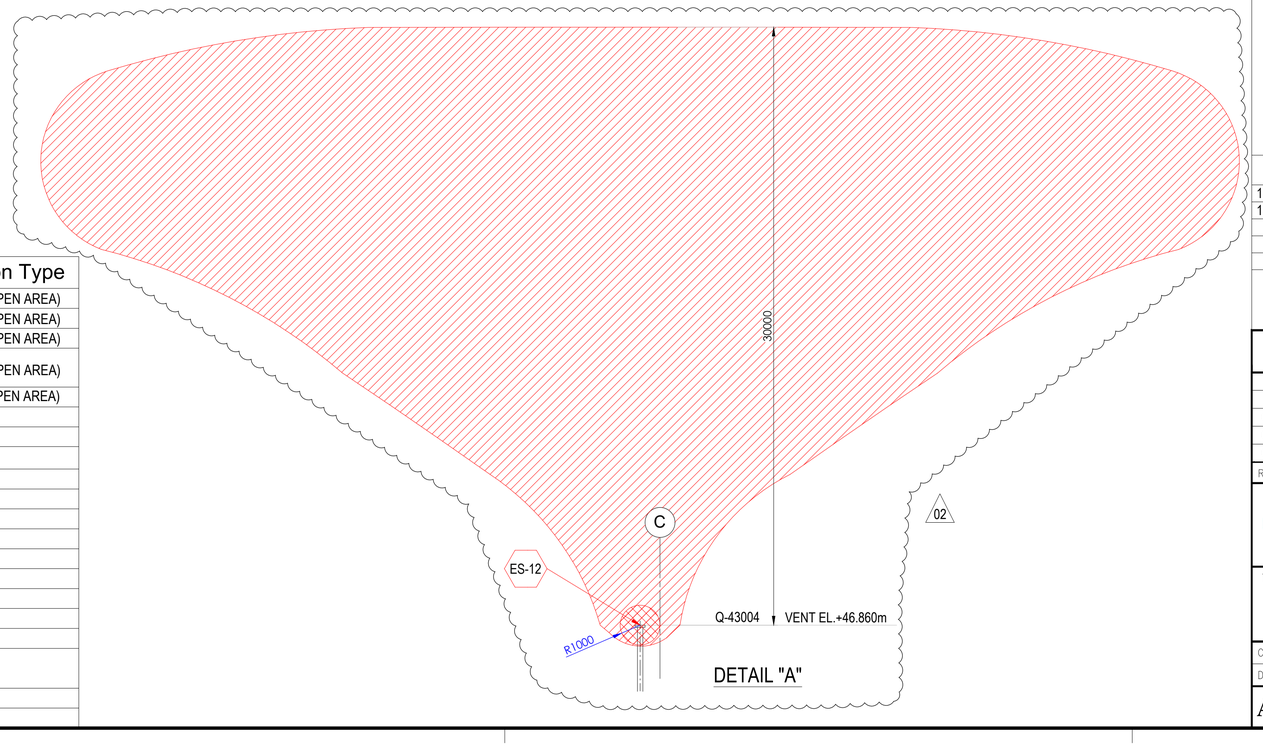


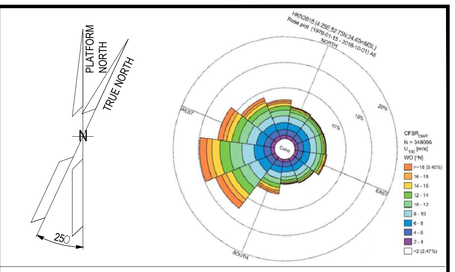
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PG-038	: Air Set Pressure Gauge Filter	Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10004741	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		NA			
Manufacturer	SITECNA			**Model**		MBS6P4S2PN6S-ATEX			
Cert No.	D.o.C. by SITECNA			**Equipment Ambient Temp.**		-55 °C to +90 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T5	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PG-038	: Air Set Pressure Gauge Filter			Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004741		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PG-038	: Air Set Pressure Gauge Filter		Dwg	123A90-FDL-PP-DI-00093-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10004741	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

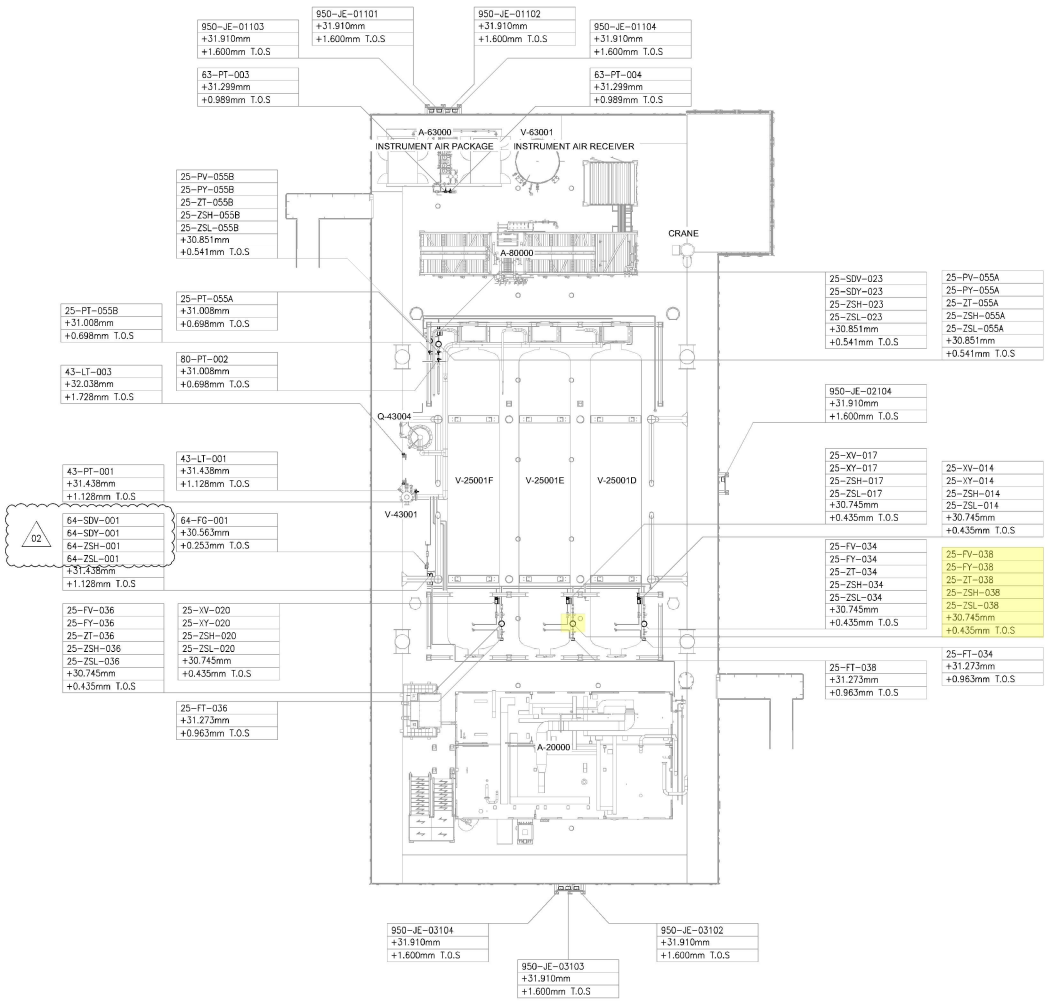
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-01-25	2025-01-30	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-25T14:00:51.984Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-30T14:38:34.264Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

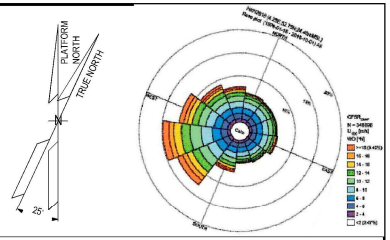
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

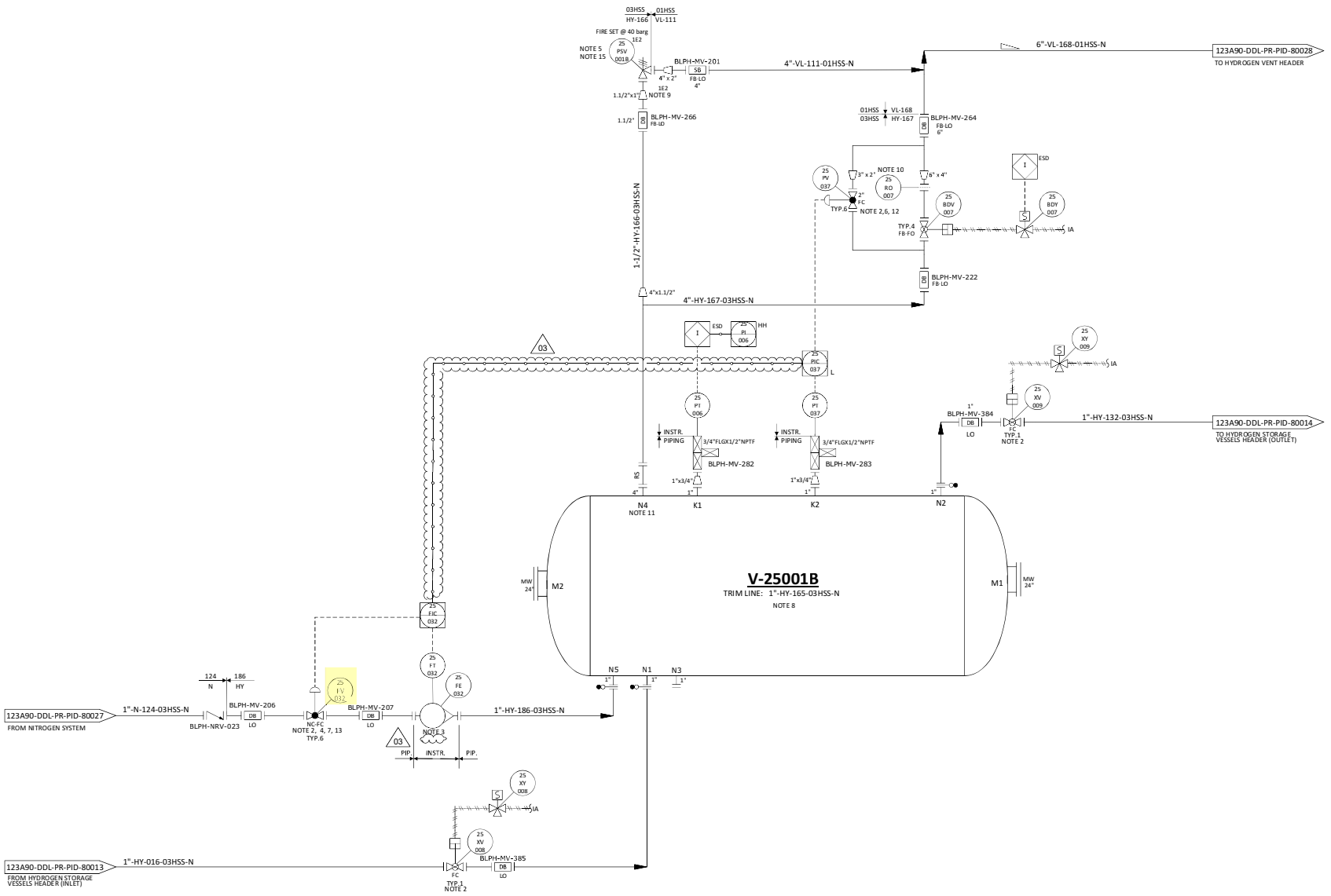
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_B

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-032) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-037 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC."PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-037 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-032 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-037 HAS FAILED TO CLOSE.
15. 25-PSV-001B SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

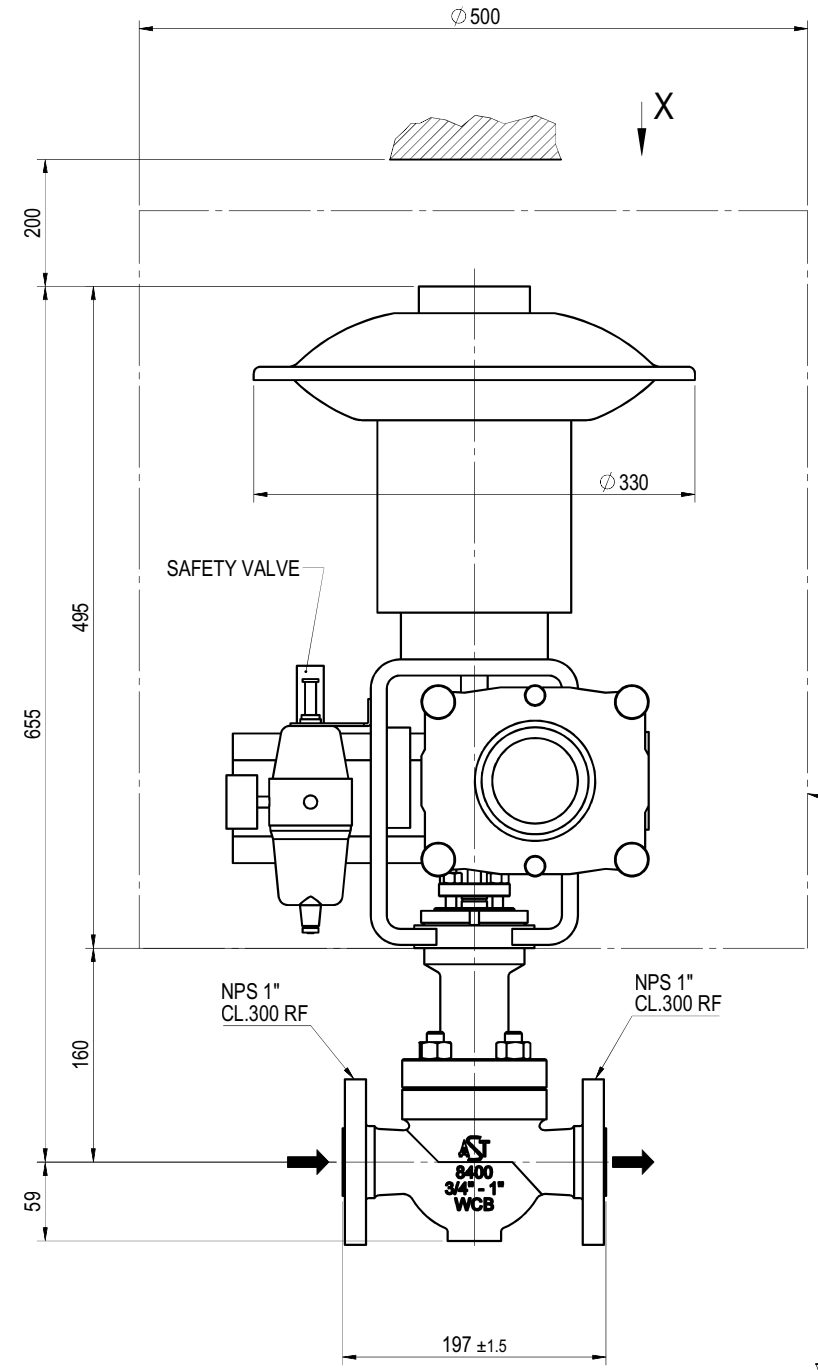
CROSSWIND

ROSETTI MARINO

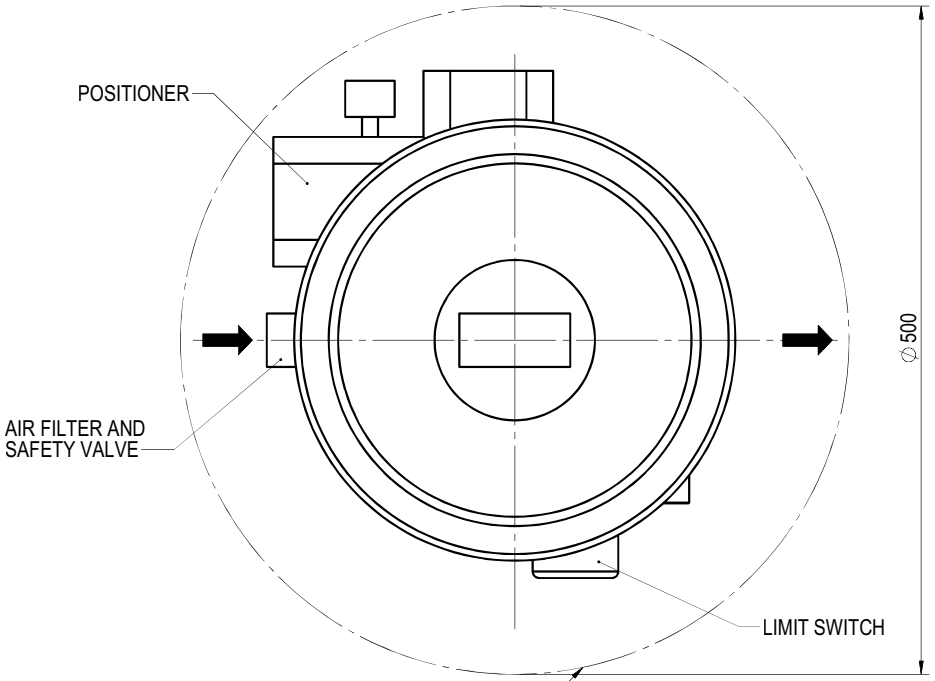
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL B

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80016		SHEET 001 / REV. 03

File Name : FILE_NAME



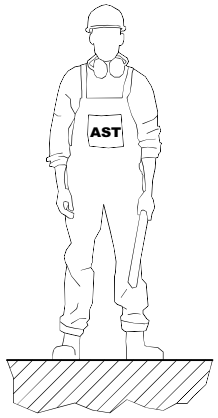
UPPER VIEW FROM "X"



MAXIMUM ACCESSORIES
OVERALL DIMENSION

POSITIONER ON BACK SIDE

MASS:
VALVE= ~ 12 kg
ACTUATOR= ~ 28 kg
TOTAL= ~ 40kg



General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-FV-031, 25-FV-032, 25-FV-033, 25-FV-034, 25-FV-036, 25-FV-038
Matricole / Serials	2400583, 2400584, 2400585, 2400586, 2400587, 2400588

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale

Mass kg

CR 00298

NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 1" PORT 1/4" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0100OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (MI) - Tel.02 934848.1 - Control valve division

GENERAL	1	Tag Number	P&ID Number			25-FV-038		123A90-DDL-PR-PID-80019	
	2	Service				NITROGEN FROM NITROGEN SYSTEM (U-64000) TO HYDROGEN STORAGE VESSEL (V-25001E)			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			1"-HY-189-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312 Gr.TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			NITROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 barg		100 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	17	Flow Rate (Gas)				Nm^3/h		40	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg		7	
	20	Pressure Drop				bar		max 7 - min 4	
	21	Inlet Temperature				°C		15	
	22	Inlet Density / Specific Gravity				kg/m^3		9.3	
	23	Inlet Compressibility Factor				-		0.99	
	24	Inlet Viscosity				cP		0.017	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-		1.4	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-		28	
CALCULATED RESULTS	28	Flow Coefficient Cv						0.3678 / 0.3846	
	29	Travel				75.6%			
	30	Sound Pressure Level				77.27 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HS03C02RFH)			
	33	Body Size	Trim Size			1"		1/4"	
	34	Rated Cv	Characteristics.			0.85		Equal% (11)	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 36L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				PTFE (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured (12, 13)			
	44	Rated Travel				13mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 1 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 14 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

ACTUATOR	50	MFR	Model	AST	SD11R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		15-30 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	(*)	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

ROSETTI MARINO

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Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PG-032	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-033	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PG-034	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PG-035	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PG-036	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-037	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PG-038	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-040	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-043	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-046	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-049	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PG-055A	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PG-055B	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PSV-001A	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291498	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-001B	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291500	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001C	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291501	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001D	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291502	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001E	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291503	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001F	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291504	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PSV-031	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03790	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-032	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03791	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-033	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03792	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PSV-034	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03793	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PSV-035	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03796	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-036	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03794	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-037	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03797	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-038	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03795	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-040	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03798	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-043	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03799	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-046	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03800	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-049	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03801	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PSV-055A	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03802	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6

Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583	Declaration of Conformity By AST_ATEX- SN "2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584	Declaration of Conformity By AST_ATEX- SN "2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585	Declaration of Conformity By AST_ATEX- SN "2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586	Declaration of Conformity By AST_ATEX- SN "2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587	Declaration of Conformity By AST_ATEX- SN "2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588	Declaration of Conformity By AST_ATEX- SN "2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589	Declaration of Conformity By AST_ATEX- SN "2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590	Declaration of Conformity By AST_ATEX- SN "2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591	Declaration of Conformity By AST_ATEX- SN "2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592	Declaration of Conformity By AST_ATEX- SN "2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593	Declaration of Conformity By AST_ATEX- SN "2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594	Declaration of Conformity By AST_ATEX- SN "2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595	Declaration of Conformity By AST_ATEX- SN "2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596	Declaration of Conformity By AST_ATEX- SN "2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597	Declaration of Conformity By AST_ATEX- SN "2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598	Declaration of Conformity By AST_ATEX- SN "2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-046	Air set Pressure Gauge Filter	3"-HY-180-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-049	Air set Pressure Gauge Filter	3"-HY-184-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055A	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055B	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031A	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031B	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-031	Safety Valve	1"-HY-153-03HSS-N	COITECH	SL

INSTALLATION, REGULATION & MAINTENANCE INSTRUCTIONS

Pressure gauges

1.INTRODUCTION

Throughout this manual there are a number of HAZARD WARNINGS that must be read and adhered to in order to prevent possible personal injury and/or damage to equipment. Three signal work "DANGER", "WARNING" and "CAUTION" are used to indicate the severity of a hazard, and are preceded by the safety alert symbol.

⚠Danger Denotes the most serious hazard and is used when serious injury or death WILL result from misuse or failure to follow specific instructions.

⚠Warning Used when serious injury or death MAY result from misuse or failure to follow specific instructions.

⚠Caution Used when injury or product/equipment damage may result from misuse or failure to follow specific instructions.

⚠Caution **⚠Warning** **⚠Danger** It is the responsibility and duty of all personnel involved in the installation, operation and maintenance of the equipment on which this device is used, to fully understand the procedures by which hazards can be avoided.

The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Only personnel with appropriate training should operate machinery and equipment.

Do not service or attempt to remove the machinery or equipment until safety is confirmed.

2.DESCRIPTION

These pressure gauges are used for measuring pressure in hazardous areas of industrial applications by means of resilient Bourdon tube pressure elements

The measuring characteristics are in accordance with the EN 837-1 standard

3. OPERATION

Bourdon gauges usually consist of an elliptical section tube whose axis is arranged along a circumference (but can also be wound more than 360 °, and therefore take the form of a spiral), called the Bourdon tube.

The Bourdon tube tends to increase its radius of curvature as the pressure inside it increases; the measurement of the radius gives the measurement of the pressure. In practice, the tube is connected to one end with a fixed point, connected to the measurement environment; the other end is connected to a leverage (see fig. 1) which amplifies its movement, and translates it into the circular movement of a pointer along a graduated scale.



1. Bourdon tube
2. connection
3. end of tube
4. leverage
5. pointer
6. graduated scale

5. TECHNICAL FEATURES

Media: compressed air, inert gases, sweet and sour gases, liquids

Size: 40mm, 50mm, 63mm, 100mm

Connection: 1/8" – 1/4" NPT, backside

Working Range: 75% of full scale value

Accuracy: 2,5%

Materials: Case: AISI304 (MBSN, MBSS) AISI316 (MBS6)

Threaded connection: nickel plated brass (MBSN)
AISI316/316L (MBSS, MBS6)

Movement: copper alloy OT59 (MBSN),
AISI316 (MBSS, MBS6)

Pointer: black aluminum

Dial: painted aluminum

TYPE	TEMPERATURE			
	TRANSPORT	STORAGE	OPERATING	PROCESS
MBSN	-25°C...+65°C	-25°C...+65°C	-25°C...+65°C	400°C max
MBSS, S6	-55°C...+90°C	-55°C...+90°C	-55°C...+90°C	400°C max

⚠Warning With gaseous media, the temperature may increase as a result of compression warming. In these cases it may be necessary to throttle the rate of change of pressure or reduce the permissible medium temperature.

The permissible medium temperature does not only depend on the instrument design, but also on the ignition temperature.

6.TRANSPORTATION & STORAGE

The preferred storage location is a clean, dry and protected warehouse. If the components have to be stored outside, precautions should be taken to keep gauges clean and dry. For storage temperatures, refer to the table in paragraph "TECHNICAL FEATURS".

7. INSTALLATION

⚠Caution Before performing any work, read this manual and study all figures. Assure yourself that you understand and you can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

⚠Warning Physical injuries and damage to property and the environment caused by media escaping under high pressure: with the pressurisation of the instrument, as a result of poor sealing of the process connection, media under high pressure can escape. Due to the high energy of the media that can escape in the event of a failure, the possibility of physical injuries and damage to property exists.

The sealing of the process connection must be carried out expertly and checked for leak tightness.

• Depending on the application, the instrument should be filled with the medium before screwing in, in order to ensure it functions properly.

• After installation, cut the rubber plug to ovid overpressure

• For outdoor applications, the selected installation location has to be suitable for the specified ingress protection, so that the pressure gauge is not exposed to impermissible weather conditions.

• In order to avoid any additional heating, the instruments must not be exposed to direct solar irradiation while in operation!

Requirements for the installation point: if the line to the measuring instrument is not adequately stable, an instrument bracket should be used for fastening (and possibly via a flxible capillary). If vibrations cannot be avoided by means of suitable installation, instruments with liquid filling should be used.

The instruments should be protected against coarse dirt and wide fluctuations in ambient tempeature.

⚠Warning Physical injuries and damage to property and the environment can be caused by the back or blowing out or breakage of front glass in the event of a failure. Due to the high energy in the back, if it is blown out in the event of a failure, there is a risk of physical injuries or damage to property through the ejected back and the media that would then escape. Due to high energy in the front, the glass can break and there is a risk of physical injuries or damage to property. It must be ensured that at no time can personnel or objects be at the rear of the instrument.

8. MOUNTING

In accordance with the general technical regulations for pressure gauges (e.g. EN 837-2 "Selection and installation recommendations for pressure gauges"), instruments must be grounded via the process connection.This is why electrically conductive sealing should be used at the process connection. Alternatively, take other measures for grounding. Measures for grounding applied ex works (e.g. welding spots or fuse plates) must therefore be used to integrate the devices into the equipotential bonding system and must not be removed under any circumstances. Ensure that the measures for grounding are reinstalled after dismounting (e.g. replacing the device).

The torque depends on the sealing used. In order to orientate the measuring instrument so that it can be read as well as possible, a connection with LH-RH union or union nut should be used.When a blow-out device is fitted to a pessure gauge, it must be protected against being blocked by debris and dirt.

9. MAINTENANCE

A.Ordinary maintenance

The instruments are maintenance-free.The indicator and switching function should be checked once or twice every year. For this the instrument must be disconnected from the process to check with a pressure testing device.Repairs must only be carried out by the manufacturer or appropriately qualified skilled personnel

B. Troubleshooting

Issue	Possible Cause	Fixes
No pointer movement despite change in pressure	Movement blocked	Replace instrument
	Pressure element defective	
	Pressure port blocked	
After de-pressurisation, the pointer remains just above the 0 point	Friction in the movement	Tap lightly on the case
	Instrument was overloaded	Replace instrument
	Material fatigue of the pressure element	
The pointer remains outside the zero point tolerance after installation and depressurisation.	Instrument not mounted in nominal position.	Check the mounting position
	Transport damage (e.g. non-permissible shock loading)	Replace instrument
Instrument outside the accuracy class.	Instrument was operated outside of permissible performance limits.	Check the observance of the operating parameters of app. Replace instrument.
Vibration of the pointer.	Vibrations in the application	Use instrument with case filling.
Mechanical damage (e.g. window, case).	Improper handling	Replace instrument

10. LABEL



11. MARKING ACORDING TO 2014/34/UEAtex

II 2G Ex h IIC T6/T5 Gb X

II 2D Ex h IIIC T85°C/T100°C Db X

For using these equipment in potentially explosive atmospheres, it is recommended - for the installation and the maintenance operation - to use tools and instruments that can produce only a single spark (for instance: screwdrivers, spanners). Avoid use of tools that can produce sparks like disk saw or grinder

Action must be taken to put to earth the units through a suitable connection, checking that all the metal components (fittings and pipe line) have to be equitable potential.

Equipment have to be installed in the corresponding zone according to the marking.

NOTE: special conditions for safe use (X conditions)

1. All accessories (e.g. valves or attachment components) must be assessed in combination with the delivered instruments by the end user.
2. The operator must recognise ignition hazards and take suitable protective measures.
3. The legibility of the marking must be observed during time in use but at least during inspection periods of three years.
4. For instruments with marking pointer, ensure that there are no electrostatic charging mechanisms at the marking pointer.
5. Avoid any kind of external impact. External impacts can generate sparks through friction processes between different materials.
6. The filling/refilling of instruments by non-authorised personnel

SITECNA®
Flow Control Technologies

Trace No: xxxx

Dichiarazione di conformità UE
In accordo con la Direttiva Europea 2014/34/UE

EU-Declaration of Conformity
In accordance with Directive 2014/34/EU

Noi, Sitecna Srl, dichiariamo che i seguenti prodotti / Sitecna Srl declares that the following equipment:

Product	mod.	Product	mod.	Product	mod.
Filter	F…	Volume Booster	VB…	Flow regulator	RFB…, RFU…
Regulator	R…	Control spool valve	DP…	Glass tube flowmeter	FLGSS…
Filter Regulator	FR…	Quick exhaust valve	VSR…	Vacuum pump	ST-VP…
Back Pressure valve	BP	Lock-up valve	LK…	Silencer	SLHF…, SLVP…, SLSC…
2 ways switching valve	SV…	Overload protector	SCLP…	Dust excluder	PV…, PVSL…
3 ways switching valve	S3…	Tee Filter	TF	Pressure gauge	MBSS…, MBS6…, MBSN…

Sono conformi alla normativa di armonizzazione dell'Unione / They comply with the Union harmonization legislation:

Direttiva 2014/34/UE ATEX	Direttiva 2014/34/UE del Parlamento europeo e del Consiglio, del 26 febbraio 2014, concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva (rifusione) Testo rilevante ai fini del SEE.
	Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast) Text with EEA relevance.

Secondo le seguenti Norme di riferimento / As per folowing reference Normative Documents:

EN ISO 80079-36:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive - Metodo di base e requisiti
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Basic method and requirements
EN ISO 80079-37:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive – Tipo di protezione non elettrica per sicurezza costruttiva "c", per controllo della sorgente di accensione "b", per immersione in liquido "k"
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"
N 1127-1:2011	Atmosfere esplosive - Prevenzione dell'esplosione e protezione contro l'esplosione - Concetti fondamentali e metodologia
	Explosive atmospheres - Explosion prevention and protection - Basic concepts and methodology

Ai sensi della Direttiva 2014/34/EU, i prodotti sopra indicati riportano la seguente marcatura / According to the Directive 2014/34/EU, above mentioned products reports the following marking:

II 2G Ex h IIC T6/T5 Gb X
II 2D Ex h IIIC T85°C/T100°C Db X

Inoltre, ai sensi della direttiva 2014/34/UE, i prodotti sopra menzionati sono oggetto, per gli aspetti relativi sia alla progettazione sia alla fabbricazione, al controllo interno di fabbricazione (Allegato VIII – Modulo A). **Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.**
In conformity to Directive 2014/34/EU, the afore mentioned equipment, regarding their design and production, are object to internal manufacturing check (Attachment VIII – Module A**). Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.**

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.
This declaration of conformity is issued under exclusive responsibility of the manufacturer.

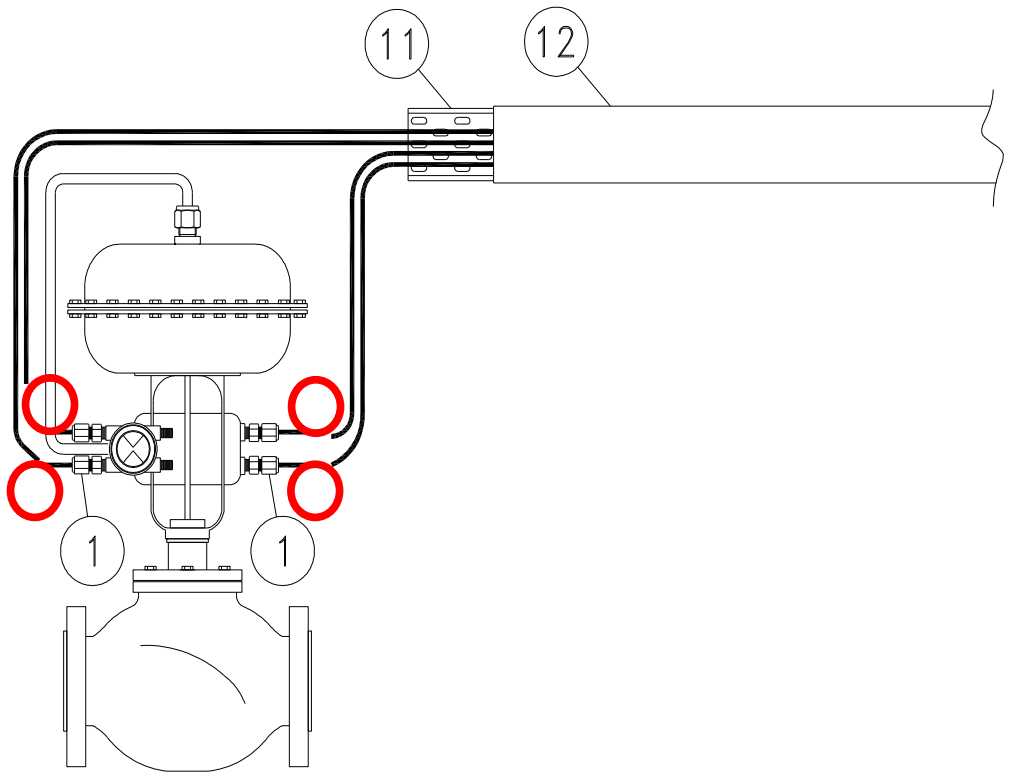
Milan, 20/05/2020
Davide Matteo De Corrado
Managing Director

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P.IVA/C.FISC. 08973090155
NR MECC. MI253803
C.C.I.A.A. 1259759

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
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30	

NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

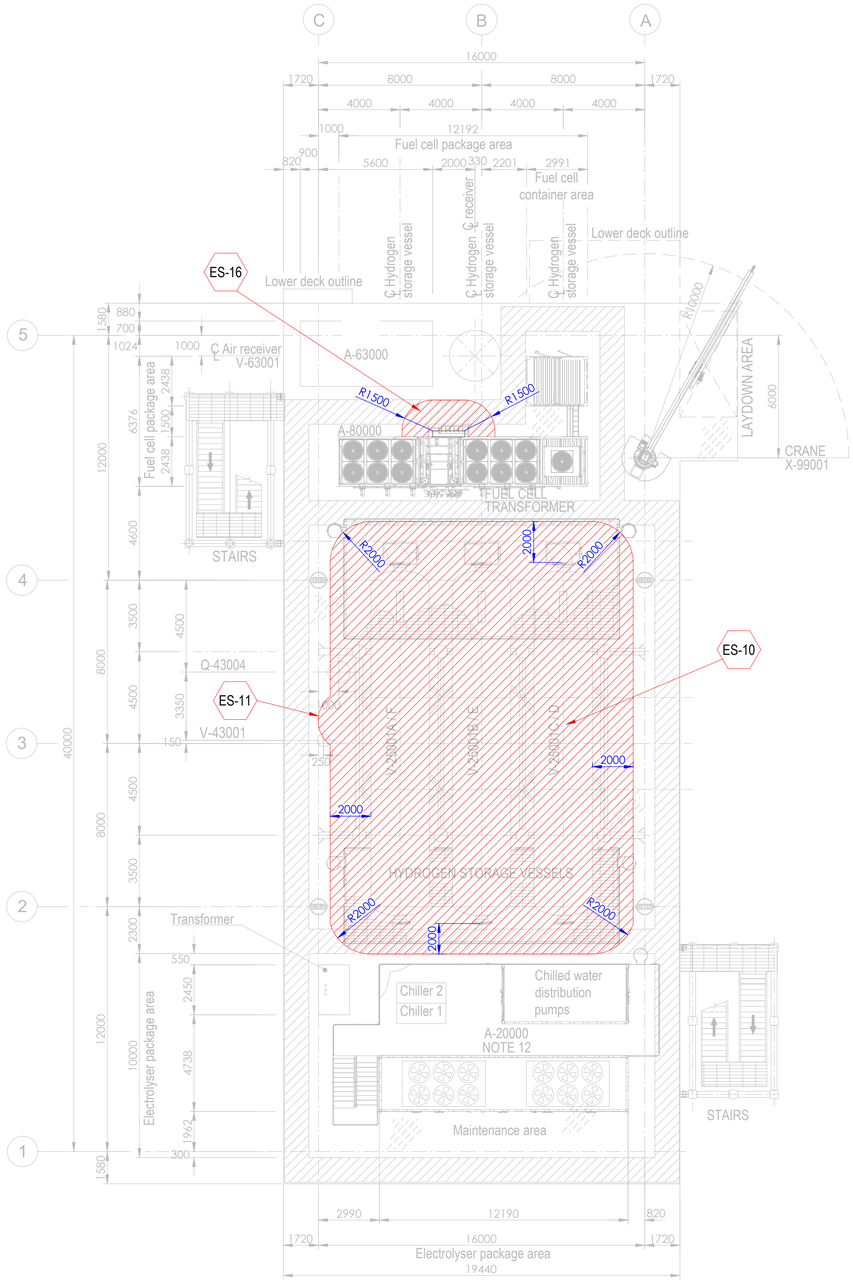
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

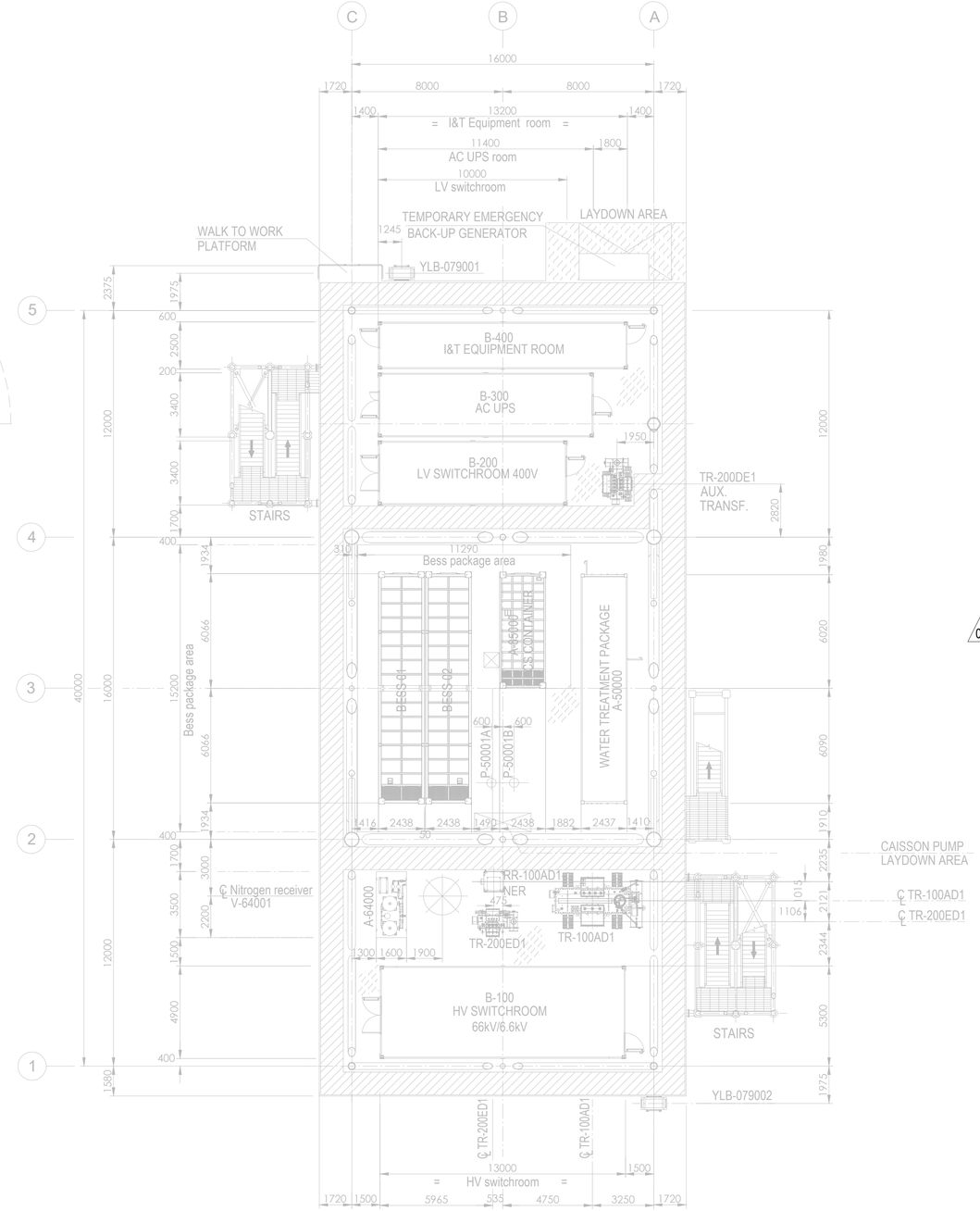
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



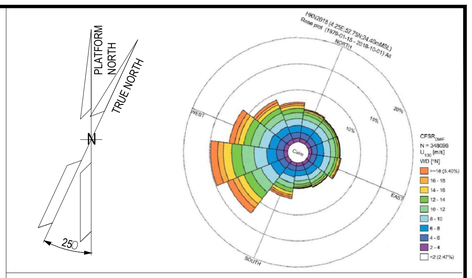
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

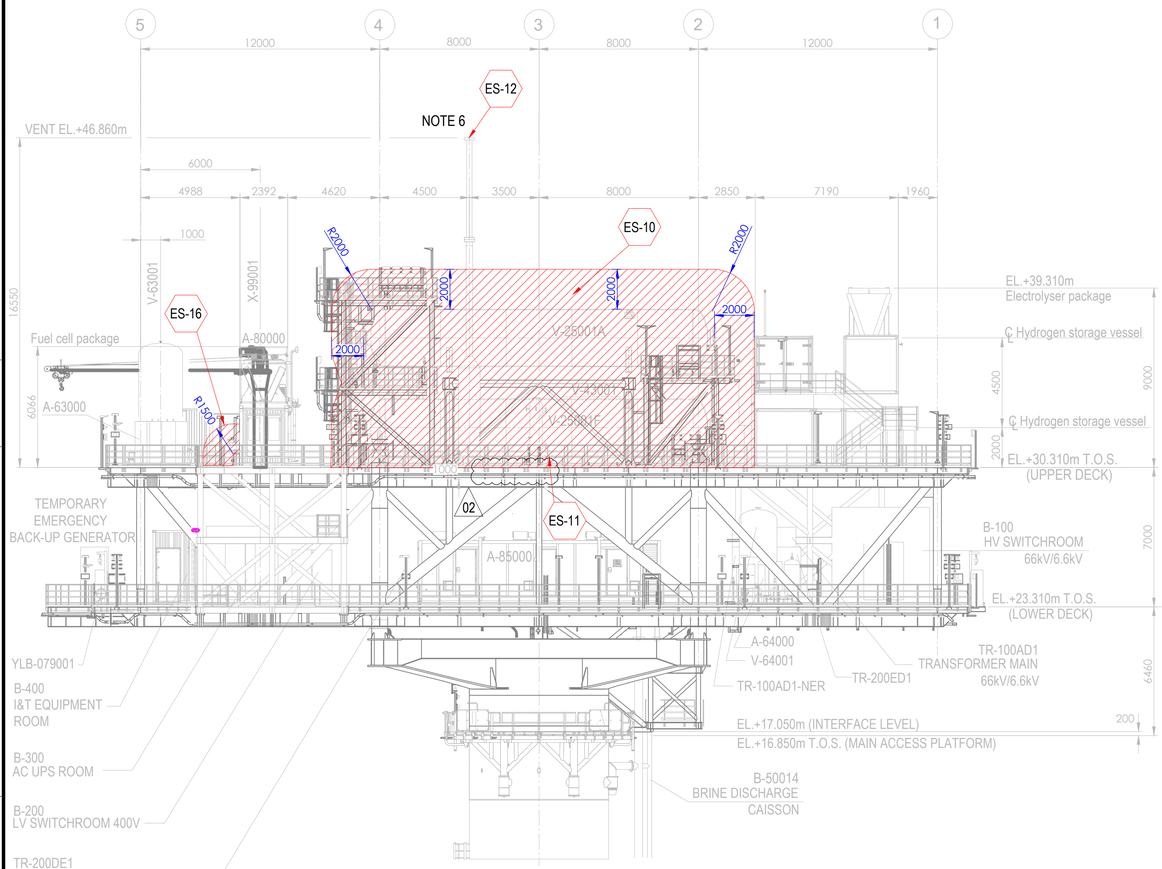
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DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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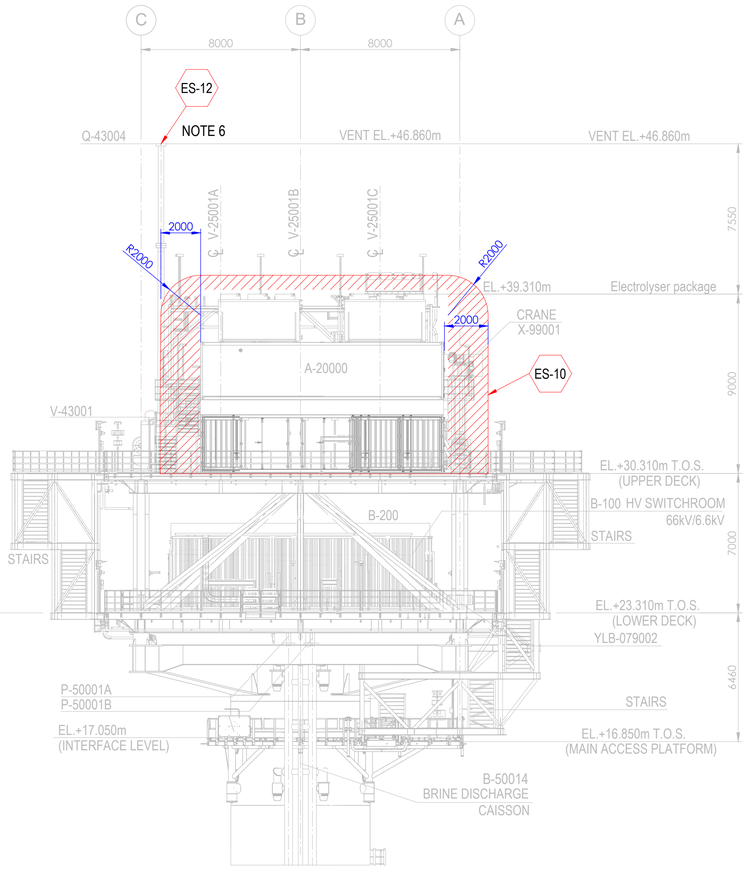
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REV. 02

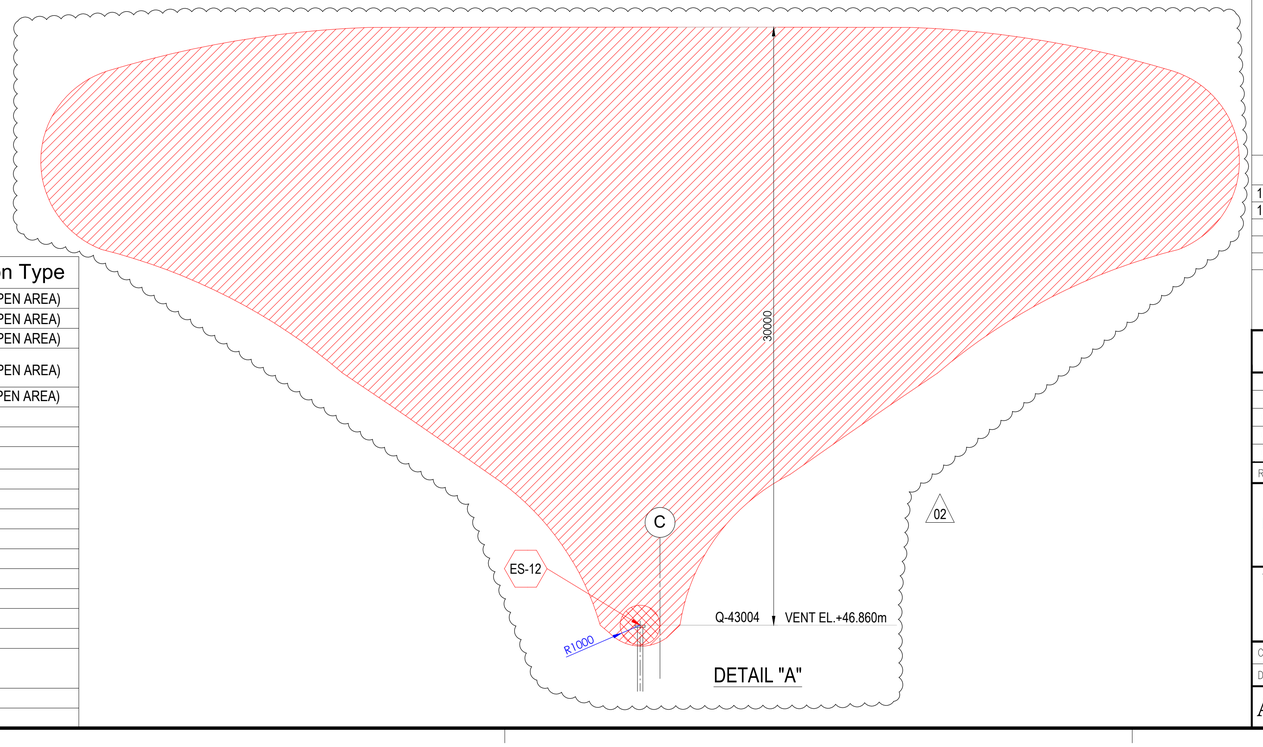


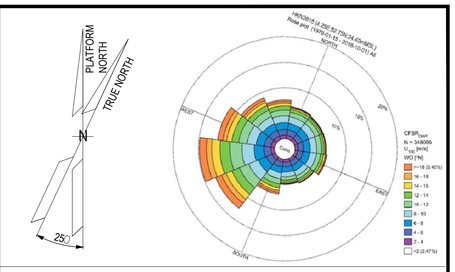
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PG-046	: Air Set Pressure Gauge Filter	Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10004746	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		NA			
Manufacturer	SITECNA			**Model**		MBS6P4S2PN6S-ATEX			
Cert No.	Declaration of conformity by manufacturer			**Equipment Ambient Temp.**		-55 °C to +90 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T5	**IP Rating**	IP66

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state “NA”. Comments are required for ‘Failure’ column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PG-046	: Air Set Pressure Gauge Filter			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004746		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PG-046	: Air Set Pressure Gauge Filter		Dwg	123A90-FDL-PP-DI-00084-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10004746	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

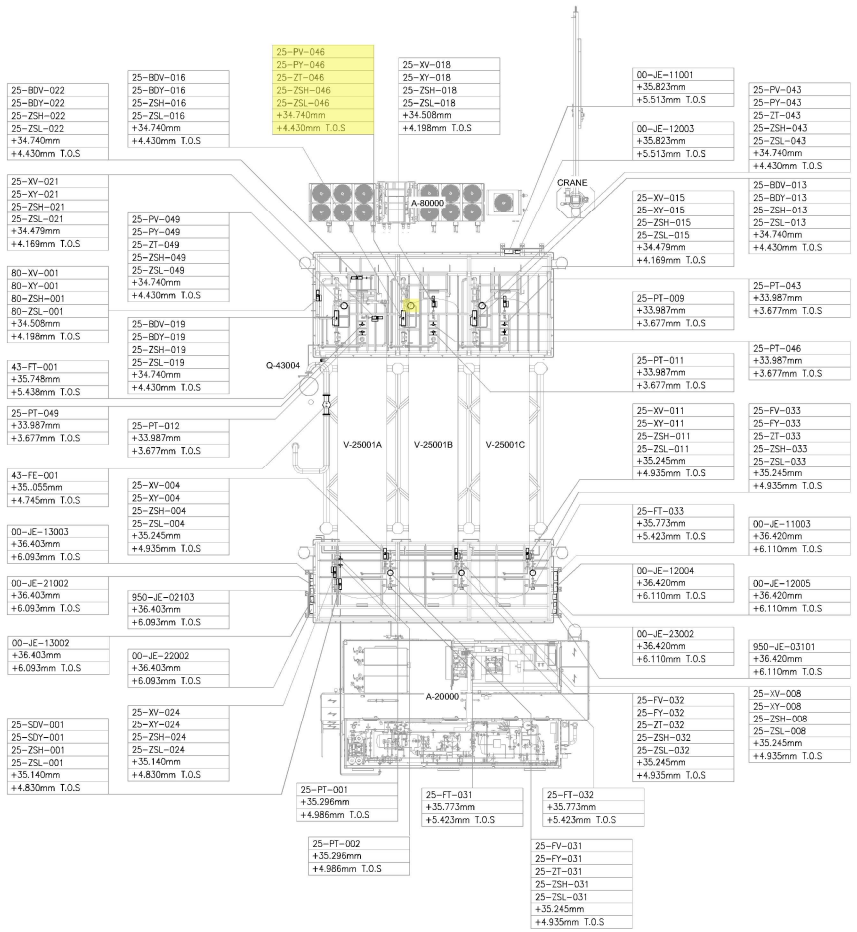
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-10	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-10T12:33:58.183Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-17T12:33:27.595Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

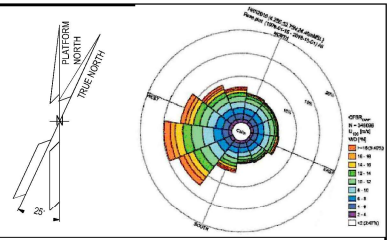
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

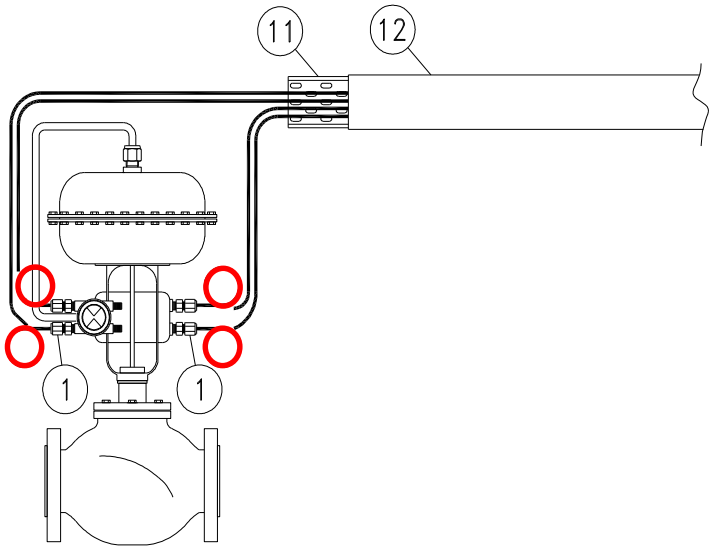
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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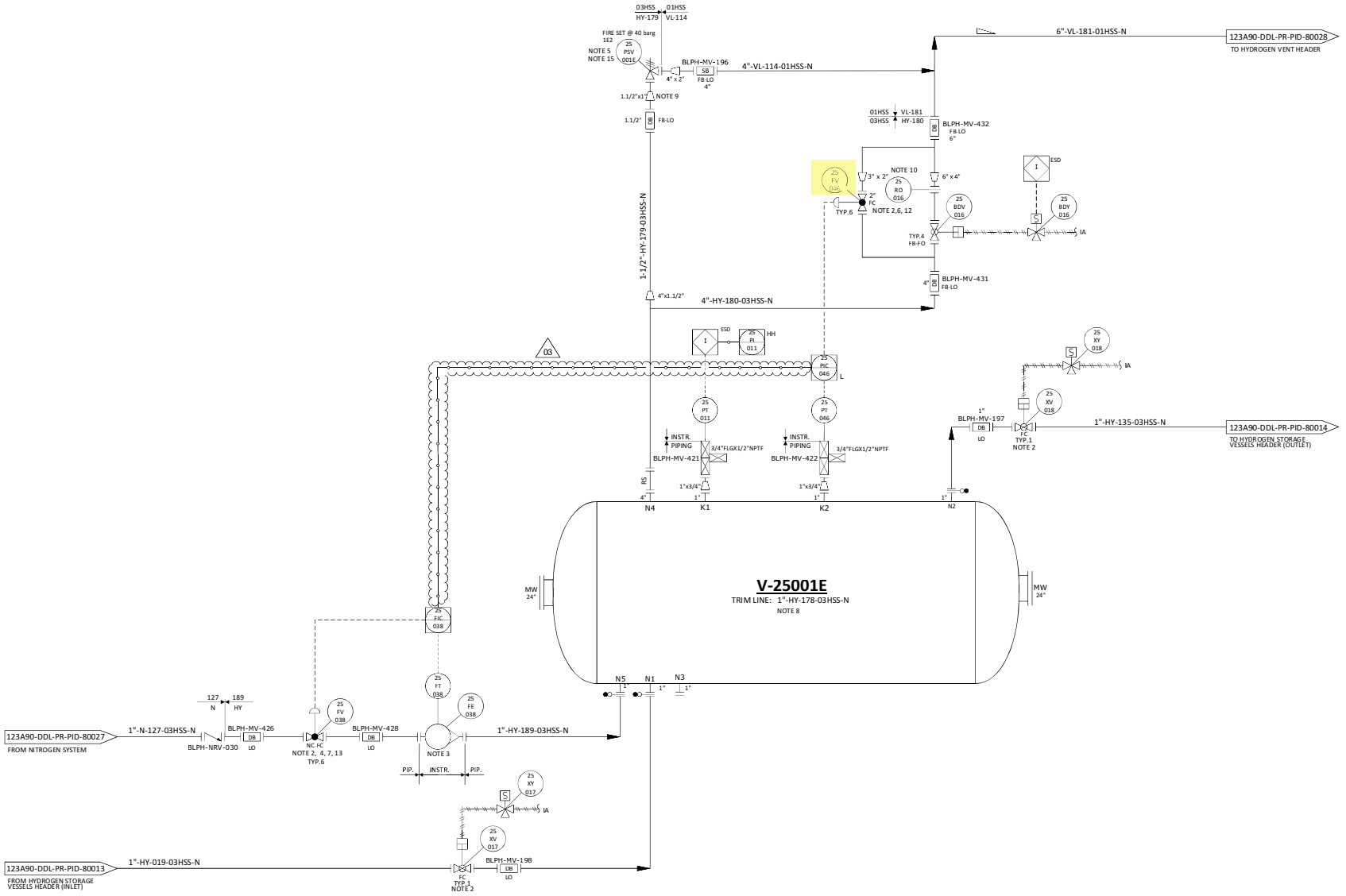
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

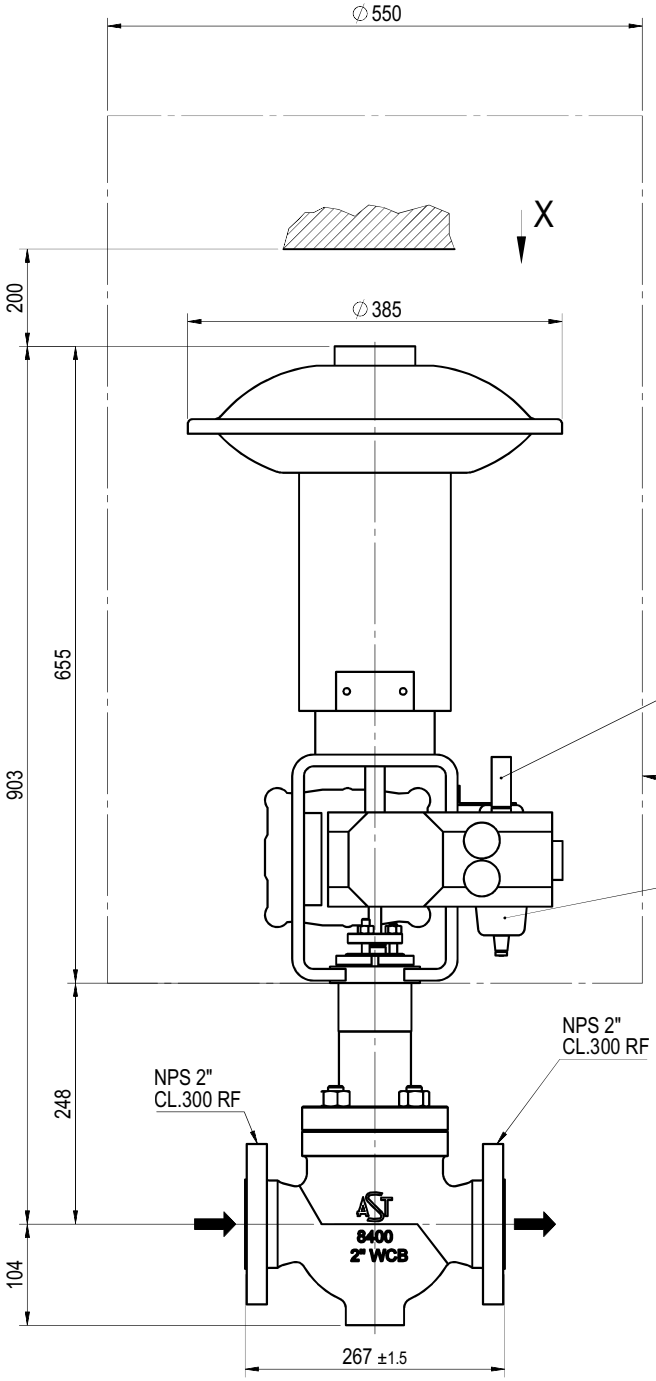
CROSSWIND

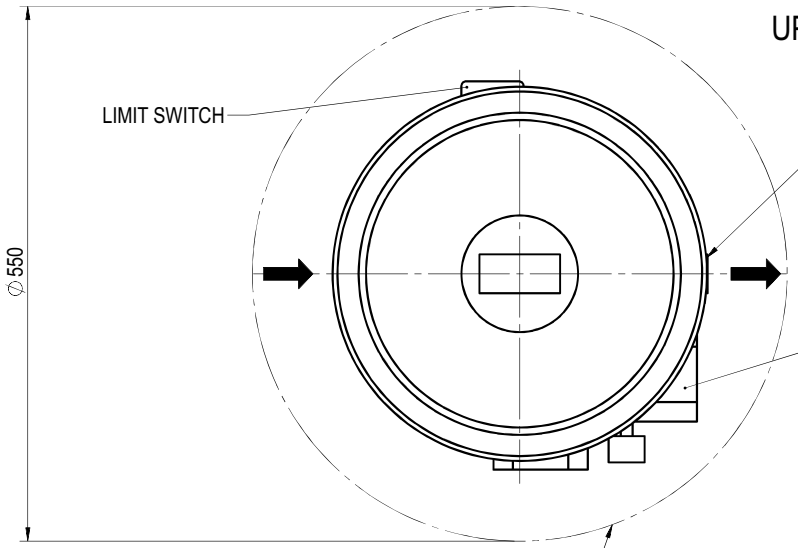
ROSETTI MARINO

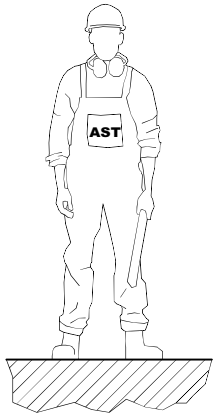
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME







POSITIONER ON FRONT SIDE

MASS:
VALVE= ~ 30 kg
ACTUATOR= ~ 45 kg
TOTAL= ~ 75 kg

General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-PV-035, 25-PV-037, 25-PV-040, 25-PV-043, 25-PV-046, 25-PV-049
Matricole / Serials	2400589, 2400590, 2400591, 2400592, 2400593, 2400594

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale | Mass kg | CR 00299 | NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 2" PORT 1" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0200OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (Mi) - Tel.02 934848.1 - Control valve division

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PG-032	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-033	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PG-034	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PG-035	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PG-036	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-037	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PG-038	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-040	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-043	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-046	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-049	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PG-055A	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PG-055B	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PSV-001A	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291498	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-001B	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291500	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001C	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291501	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001D	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291502	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001E	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291503	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001F	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291504	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PSV-031	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03790	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-032	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03791	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-033	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03792	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PSV-034	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03793	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PSV-035	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03796	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-036	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03794	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-037	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03797	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-038	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03795	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-040	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03798	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-043	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03799	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-046	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03800	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-049	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03801	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PSV-055A	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03802	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6

Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031B	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - Ex db IIC T5/T6	Tiissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-046	Air set Pressure Gauge Filter	3"-HY-180-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-049	Air set Pressure Gauge Filter	3"-HY-184-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055A	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055B	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031A	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031B	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-031	Safety Valve	1"-HY-153-03HSS-N	COITECH	SLK	24-03790	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-032	Safety Valve	1"-HY-186-03HSS-N	COITECH	SLK	24-03791	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-033	Safety Valve	1"-HY-187-03HSS-N	COITECH	SLK	24-03792	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-034	Safety Valve	1"-HY-188-03HSS-N	COITECH	SLK	24-03793	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-036	Safety Valve	1"-HY-190-03HSS-N	COITECH	SLK	24-03794	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-038	Safety Valve	1"-HY-190-03HSS-N	COITECH	SLK	24-03795	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-035	Safety Valve	3"-HY-142-03HSS-N	COITECH	SLK	24-03796	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-037	Safety Valve	3"-HY-167-03HSS-N	COITECH	SLK	24-03797	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-040	Safety Valve	3"-HY-171-03HSS-N	COITECH	SLK	24-03798	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-043	Safety Valve	3"-HY-175-03HSS-N	COITECH	SLK	24-03799	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-046	Safety Valve	3"-HY-180-03HSS-N	COITECH	SLK	24-03800	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-049	Safety Valve	3"-HY-184-03HSS-N	COITECH	SLK	24-03801	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-055A	Safety Valve	1-1/2"-HY-148-03HSS-N	COITECH	SLK	24-03802	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-055B	Safety Valve	1-1/2"-HY-148-03HSS-N	COITECH	SLK	24-03803	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PSV-031A	Safety Valve	1"-N-158-01CS-N	COITECH	SLK	24-03804	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PSV-031B	Safety Valve	1"-N-158-01CS-N	COITECH	SLK	24-03805	CE Ex - II 2 GD Ex h X	Coitech EU - Type Examination Certificate	Declaration of Conformity By COITECH SLKL-08HA74-015	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES

GENERAL	1	Tag Number	P&ID Number			25-PV-046		123A90-DDL-PR-PID-80019	
	2	Service				HYDROGEN FROM STORAGE VESSEL (V-25001E) TO HYDROGEN VENT HEADER			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			3"-HY-180-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		3" / 3.05 mm		3" / 3.05 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312/TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			HYDROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 Barg		80 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	N2	H2	
	17	Flow Rate (Gas)				Nm^3/h	40	500	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg	min 1 - max 4	min 1 - max 4	
	20	Pressure Drop				bar	0.7	0.7	
	21	Inlet Temperature				°C	AMB	AMB	
	22	Inlet Density / Specific Gravity				kg/m^3	2.3 - 5.8	0.16 - 0.41	
	23	Inlet Compressibility Factor				-	1	1	
	24	Inlet Viscosity				cP	0.01	0,01	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-	1.3	1.3	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-	28	2	
CALCULATED RESULTS	28	Flow Coefficient Cv					1.719 / 0.9689	5.772 / 3.241	
	29	Travel				80.8%			
	30	Sound Pressure Level				83.01 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HT03C02RFH)			
	33	Body Size	Trim Size			2"		1"	
	34	Rated Cv	Characteristics.			13		(11) Equal%	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				ASTM A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 316L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				Grafite - VF1 (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured Plug (12, 13)			
	44	Rated Travel				25mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

						INSTRUMENT DATASHEET	CROSSWIND	
						Control Valve (Sheet 1 of 2)	ROSETTI MARINO	
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO		Sheet 26 of 37	
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO			
No.	Date	Description	By	Chkd	Appr	Code:	Dwg.No 123A90-DDL-IN-DS-40036	Rev. 01

ACTUATOR	50	MFR	Model	AST	SD13R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		20-44 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	Magnetic	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.
(2) Hydrogen service - Packing ISO 15848-1

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 27 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

INSTALLATION, REGULATION & MAINTENANCE INSTRUCTIONS

Pressure gauges

1.INTRODUCTION

Throughout this manual there are a number of HAZARD WARNINGS that must be read and adhered to in order to prevent possible personal injury and/or damage to equipment. Three signal work "DANGER", "WARNING" and "CAUTION" are used to indicate the severity of a hazard, and are preceded by the safety alert symbol.

⚠Danger Denotes the most serious hazard and is used when serious injury or death WILL result from misuse or failure to follow specific instructions.

⚠Warning Used when serious injury or death MAY result from misuse or failure to follow specific instructions.

⚠Caution Used when injury or product/equipment damage may result from misuse or failure to follow specific instructions.

⚠Caution **⚠Warning** **⚠Danger** It is the responsibility and duty of all personnel involved in the installation, operation and maintenance of the equipment on which this device is used, to fully understand the procedures by which hazards can be avoided.

The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Only personnel with appropriate training should operate machinery and equipment.

Do not service or attempt to remove the machinery or equipment until safety is confirmed.

2.DESCRIPTION

These pressure gauges are used for measuring pressure in hazardous areas of industrial applications by means of resilient Bourdon tube pressure elements

The measuring characteristics are in accordance with the EN 837-1 standard

3. OPERATION

Bourdon gauges usually consist of an elliptical section tube whose axis is arranged along a circumference (but can also be wound more than 360 °, and therefore take the form of a spiral), called the Bourdon tube.

The Bourdon tube tends to increase its radius of curvature as the pressure inside it increases; the measurement of the radius gives the measurement of the pressure. In practice, the tube is connected to one end with a fixed point, connected to the measurement environment; the other end is connected to a leverage (see fig. 1) which amplifies its movement, and translates it into the circular movement of a pointer along a graduated scale.



1. Bourdon tube
2. connection
3. end of tube
4. leverage
5. pointer
6. graduated scale

5. TECHNICAL FEATURES

Media: compressed air, inert gases, sweet and sour gases, liquids

Size: 40mm, 50mm, 63mm, 100mm

Connection: 1/8" – 1/4" NPT, backside

Working Range: 75% of full scale value

Accuracy: 2,5%

Materials: Case: AISI304 (MBSN, MBSS) AISI316 (MBS6)

Threaded connection: nickel plated brass (MBSN)
AISI316/316L (MBSS, MBS6)

Movement: copper alloy OT59 (MBSN),
AISI316 (MBSS, MBS6)

Pointer: black aluminum

Dial: painted aluminum

TYPE	TEMPERATURE			
	TRANSPORT	STORAGE	OPERATING	PROCESS
MBSN	-25°C...+65°C	-25°C...+65°C	-25°C...+65°C	400°C max
MBSS, S6	-55°C...+90°C	-55°C...+90°C	-55°C...+90°C	400°C max

⚠Warning With gaseous media, the temperature may increase as a result of compression warming. In these cases it may be necessary to throttle the rate of change of pressure or reduce the permissible medium temperature.

The permissible medium temperature does not only depend on the instrument design, but also on the ignition temperature.

6.TRANSPORTATION & STORAGE

The preferred storage location is a clean, dry and protected warehouse. If the components have to be stored outside, precautions should be taken to keep gauges clean and dry. For storage temperatures, refer to the table in paragraph "TECHNICAL FEATURS".

7. INSTALLATION

⚠Caution Before performing any work, read this manual and study all figures. Assure yourself that you understand and you can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

⚠Warning Physical injuries and damage to property and the environment caused by media escaping under high pressure: with the pressurisation of the instrument, as a result of poor sealing of the process connection, media under high pressure can escape. Due to the high energy of the media that can escape in the event of a failure, the possibility of physical injuries and damage to property exists.

The sealing of the process connection must be carried out expertly and checked for leak tightness.

• Depending on the application, the instrument should be filled with the medium before screwing in, in order to ensure it functions properly.

• After installation, cut the rubber plug to ovid overpressure

• For outdoor applications, the selected installation location has to be suitable for the specified ingress protection, so that the pressure gauge is not exposed to impermissible weather conditions.

• In order to avoid any additional heating, the instruments must not be exposed to direct solar irradiation while in operation!

Requirements for the installation point: if the line to the measuring instrument is not adequately stable, an instrument bracket should be used for fastening (and possibly via a flxible capillary). If vibrations cannot be avoided by means of suitable installation, instruments with liquid filling should be used.

The instruments should be protected against coarse dirt and wide fluctuations in ambient tempeature.

⚠Warning Physical injuries and damage to property and the environment can be caused by the back or blowing out or breakage of front glass in the event of a failure. Due to the high energy in the back, if it is blown out in the event of a failure, there is a risk of physical injuries or damage to property through the ejected back and the media that would then escape. Due to high energy in the front, the glass can break and there is a risk of physical injuries or damage to property. It must be ensured that at no time can personnel or objects be at the rear of the instrument.

8. MOUNTING

In accordance with the general technical regulations for pressure gauges (e.g. EN 837-2 "Selection and installation recommendations for pressure gauges"), instruments must be grounded via the process connection.This is why electrically conductive sealing should be used at the process connection. Alternatively, take other measures for grounding. Measures for grounding applied ex works (e.g. welding spots or fuse plates) must therefore be used to integrate the devices into the equipotential bonding system and must not be removed under any circumstances. Ensure that the measures for grounding are reinstalled after dismounting (e.g. replacing the device).

The torque depends on the sealing used. In order to orientate the measuring instrument so that it can be read as well as possible, a connection with LH-RH union or union nut should be used.When a blow-out device is fitted to a pessure gauge, it must be protected against being blocked by debris and dirt.

9. MAINTENANCE

A.Ordinary maintenance

The instruments are maintenance-free.The indicator and switching function should be checked once or twice every year. For this the instrument must be disconnected from the process to check with a pressure testing device.Repairs must only be carried out by the manufacturer or appropriately qualified skilled personnel

B. Troubleshooting

Issue	Possible Cause	Fixes
No pointer movement despite change in pressure	Movement blocked	Replace instrument
	Pressure element defective	
	Pressure port blocked	
After de-pressurisation, the pointer remains just above the 0 point	Friction in the movement	Tap lightly on the case
	Instrument was overloaded	Replace instrument
	Material fatigue of the pressure element	
The pointer remains outside the zero point tolerance after installation and depressurisation.	Instrument not mounted in nominal position.	Check the mounting position
	Transport damage (e.g. non-permissible shock loading)	Replace instrument
Instrument outside the accuracy class.	Instrument was operated outside of permissible performance limits.	Check the observance of the operating parameters of app. Replace instrument.
Vibration of the pointer.	Vibrations in the application	Use instrument with case filling.
Mechanical damage (e.g. window, case).	Improper handling	Replace instrument

10. LABEL



11. MARKING ACORDING TO 2014/34/UEAtex

II 2G Ex h IIC T6/T5 Gb X

II 2D Ex h IIIC T85°C/T100°C Db X

For using these equipment in potentially explosive atmospheres, it is recommended - for the installation and the maintenance operation - to use tools and instruments that can produce only a single spark (for instance: screwdrivers, spanners). Avoid use of tools that can produce sparks like disk saw or grinder

Action must be taken to put to earth the units through a suitable connection, checking that all the metal components (fittings and pipe line) have to be equitable potential.

Equipment have to be installed in the corresponding zone according to the marking.

NOTE: special conditions for safe use (X conditions)

1. All accessories (e.g. valves or attachment components) must be assessed in combination with the delivered instruments by the end user.
2. The operator must recognise ignition hazards and take suitable protective measures.
3. The legibility of the marking must be observed during time in use but at least during inspection periods of three years.
4. For instruments with marking pointer, ensure that there are no electrostatic charging mechanisms at the marking pointer.
5. Avoid any kind of external impact. External impacts can generate sparks through friction processes between different materials.
6. The filling/refilling of instruments by non-authorised personnel

SITECNA®
Flow Control Technologies

Trace No: xxxx

Dichiarazione di conformità UE
In accordo con la Direttiva Europea 2014/34/UE

EU-Declaration of Conformity
In accordance with Directive 2014/34/EU

Noi, Sitecna Srl, dichiariamo che i seguenti prodotti / Sitecna Srl declares that the following equipment:

Product	mod.	Product	mod.	Product	mod.
Filter	F…	Volume Booster	VB…	Flow regulator	RFB…, RFU…
Regulator	R…	Control spool valve	DP…	Glass tube flowmeter	FLGSS…
Filter Regulator	FR…	Quick exhaust valve	VSR…	Vacuum pump	ST-VP…
Back Pressure valve	BP	Lock-up valve	LK…	Silencer	SLHF…, SLVP…, SLSC…
2 ways switching valve	SV…	Overload protector	SCLP…	Dust excluder	PV…, PVSL…
3 ways switching valve	S3…	Tee Filter	TF	Pressure gauge	MBSS…, MBS6…, MBSN…

Sono conformi alla normativa di armonizzazione dell'Unione / They comply with the Union harmonization legislation:

Direttiva 2014/34/UE ATEX	Direttiva 2014/34/UE del Parlamento europeo e del Consiglio, del 26 febbraio 2014, concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva (rifusione) Testo rilevante ai fini del SEE.
	Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast) Text with EEA relevance.

Secondo le seguenti Norme di riferimento / As per folowing reference Normative Documents:

EN ISO 80079-36:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive - Metodo di base e requisiti
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Basic method and requirements
EN ISO 80079-37:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive – Tipo di protezione non elettrica per sicurezza costruttiva "c", per controllo della sorgente di accensione "b", per immersione in liquido "k"
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"
N 1127-1:2011	Atmosfere esplosive - Prevenzione dell'esplosione e protezione contro l'esplosione - Concetti fondamentali e metodologia
	Explosive atmospheres - Explosion prevention and protection - Basic concepts and methodology

Ai sensi della Direttiva 2014/34/EU, i prodotti sopra indicati riportano la seguente marcatura / According to the Directive 2014/34/EU, above mentioned products reports the following marking:

II 2G Ex h IIC T6/T5 Gb X
II 2D Ex h IIIC T85°C/T100°C Db X

Inoltre, ai sensi della direttiva 2014/34/UE, i prodotti sopra menzionati sono oggetto, per gli aspetti relativi sia alla progettazione sia alla fabbricazione, al controllo interno di fabbricazione (Allegato VIII – Modulo A). **Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.**
In conformity to Directive 2014/34/EU, the afore mentioned equipment, regarding their design and production, are object to internal manufacturing check (Attachment VIII – Module A**). Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.**

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.
This declaration of conformity is issued under exclusive responsibility of the manufacturer.

Milan, 20/05/2020
Davide Matteo De Corrado
Managing Director

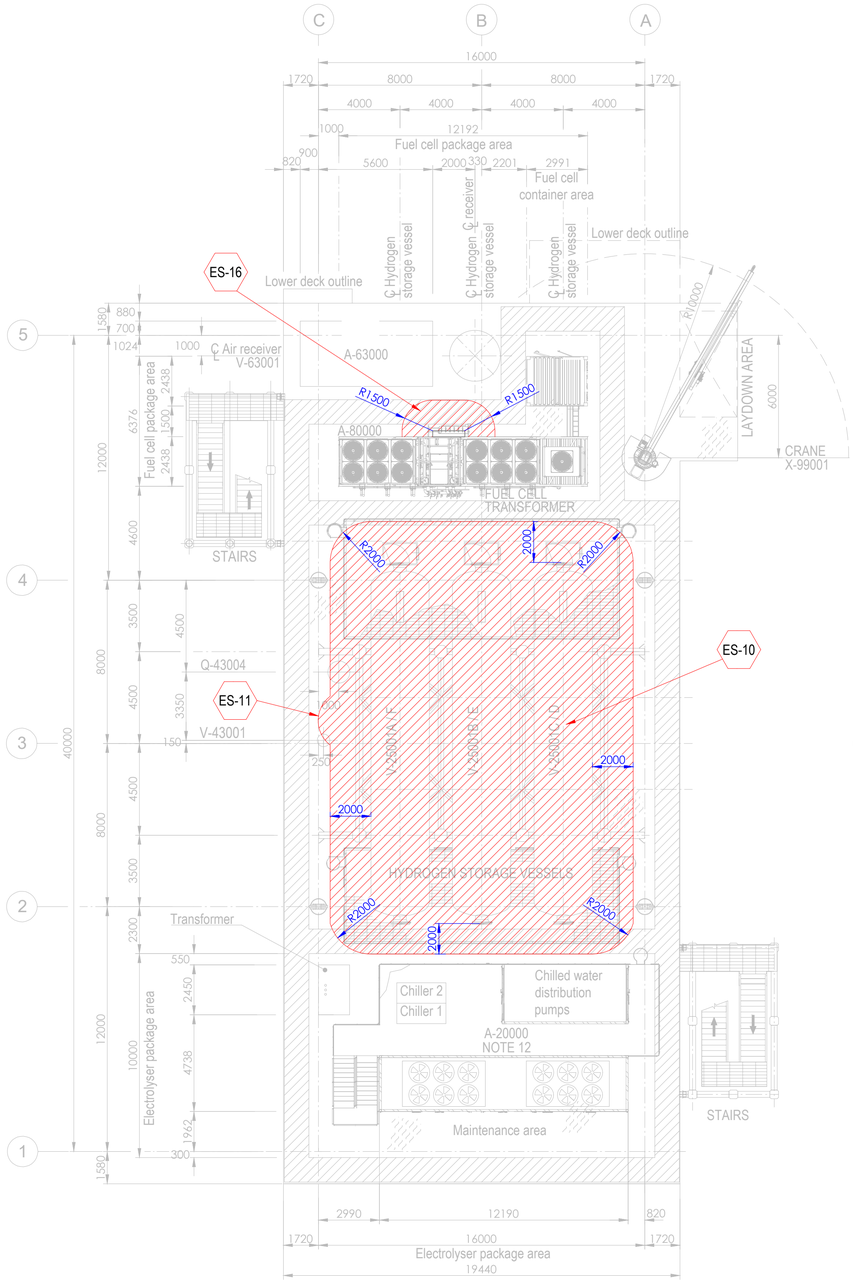
Sitecna Srl a socio unico
Via G. Di Vittorio, 22
20068 Peschiera Borromeo
Milano - Italy (Europe)

Tel. +39 025475482 ra
+39 025473182 ra
Fax +39 0255303713
e-mail : info@sitecna.eu

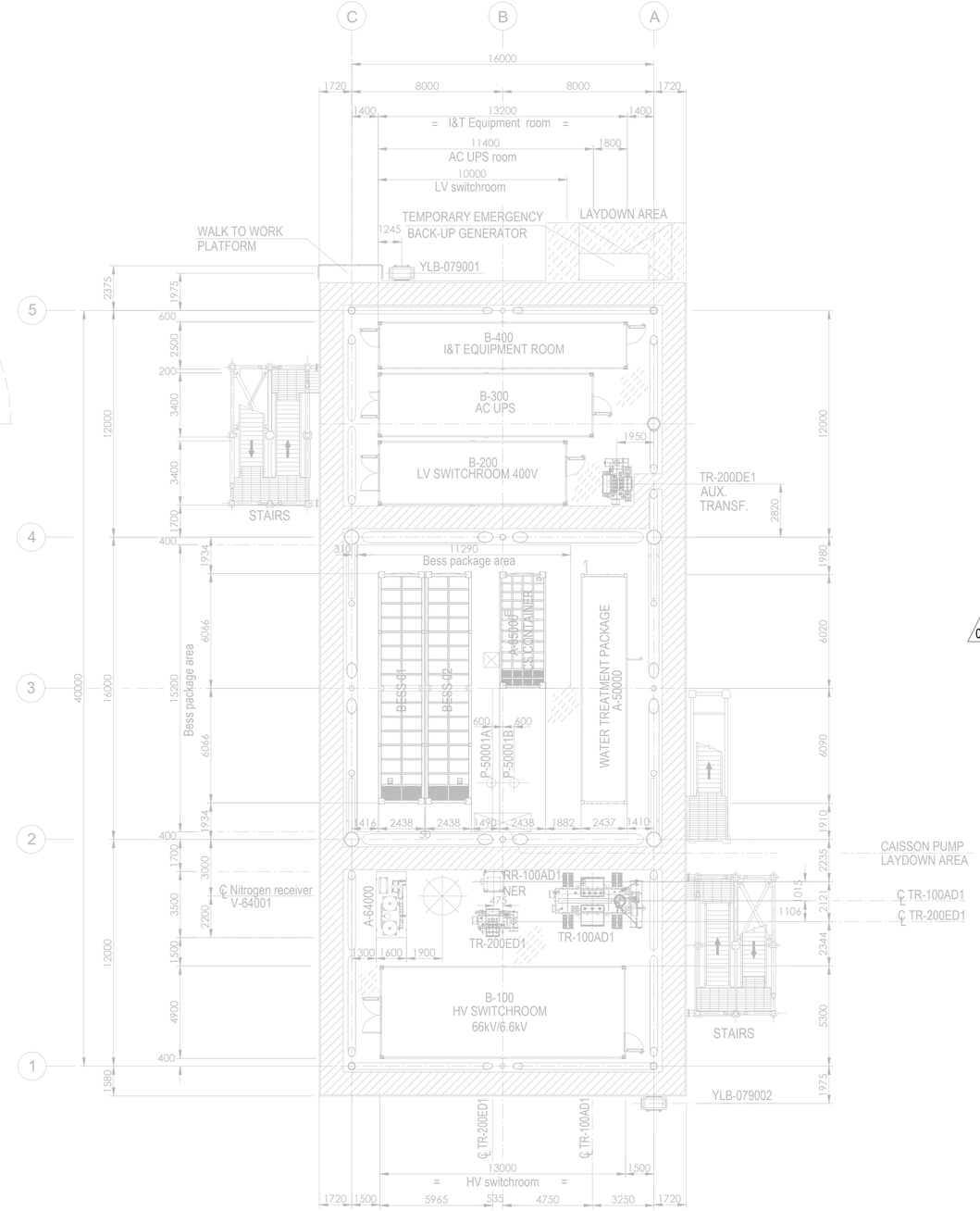
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C.C.I.A.A. 1259759

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



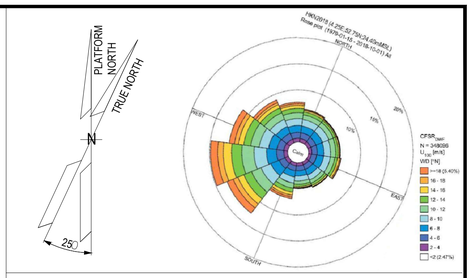
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

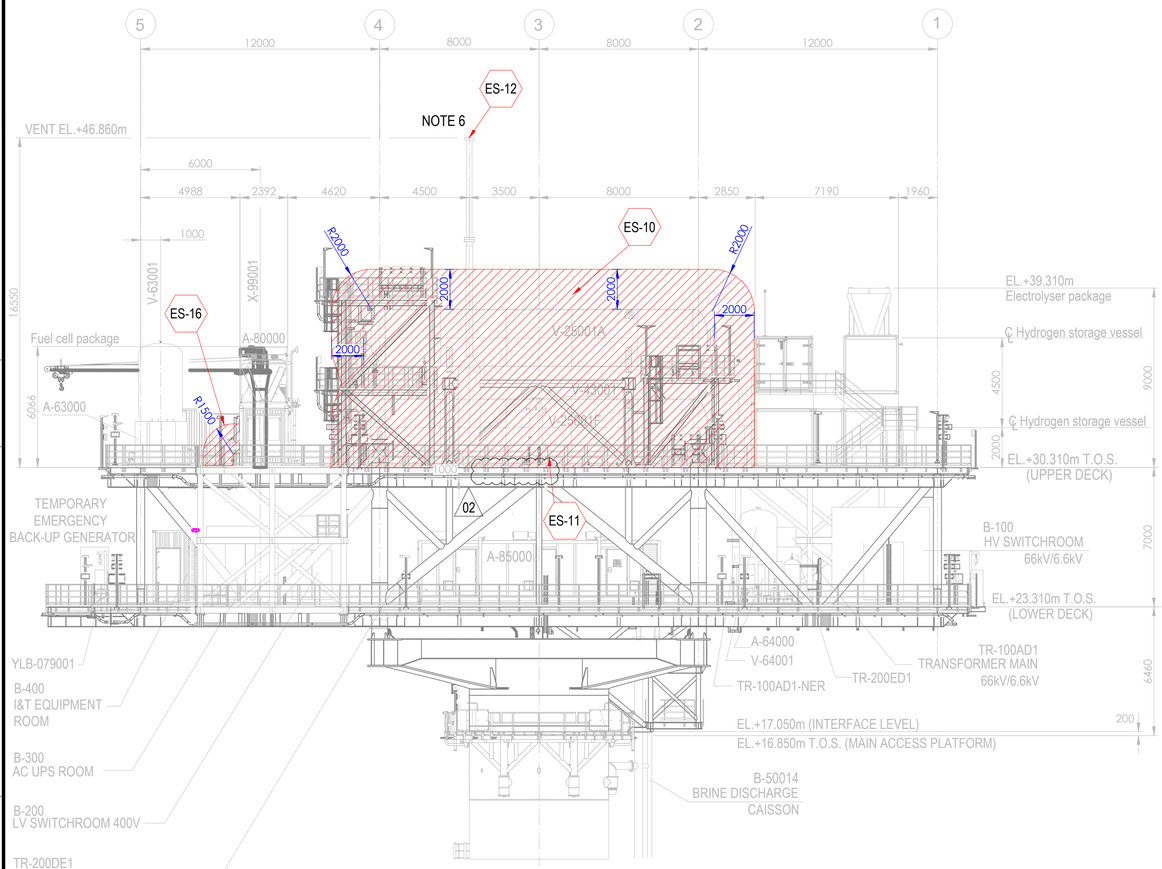
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

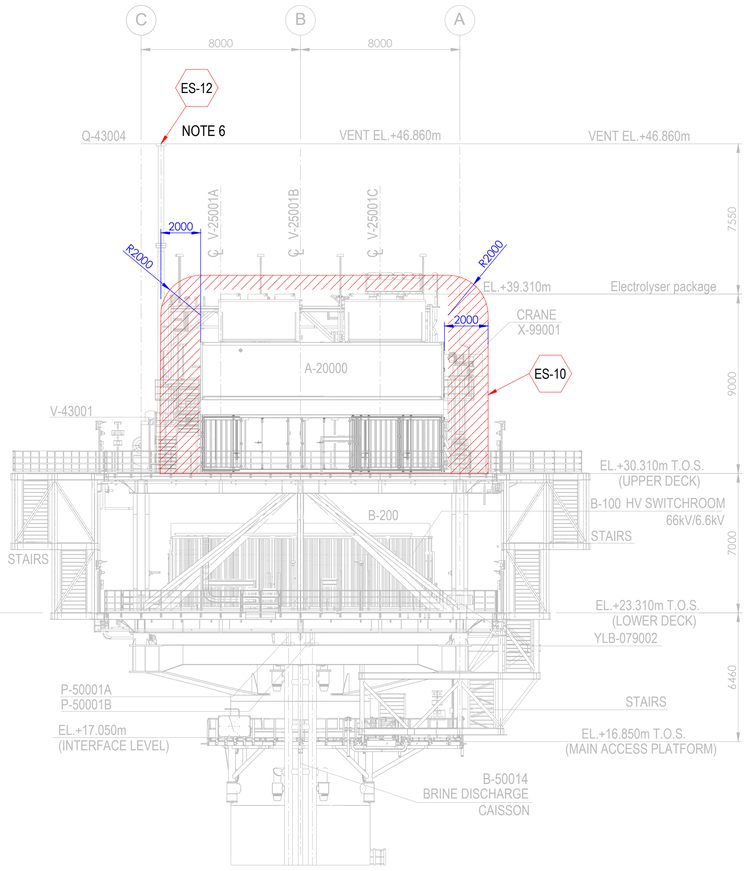
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

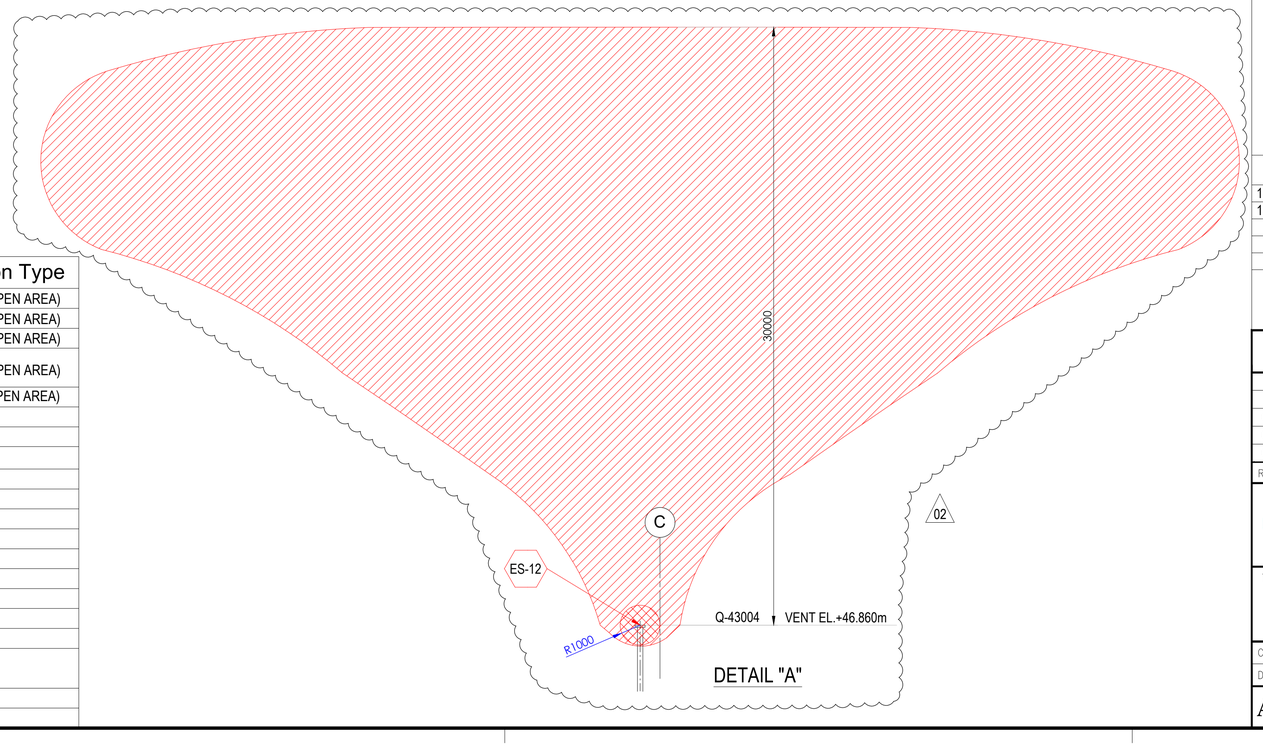


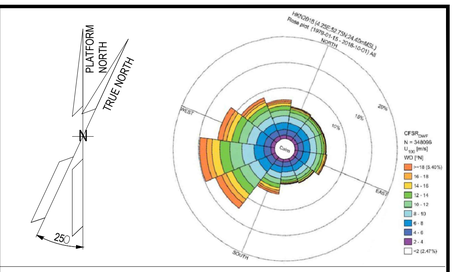
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PSV-038	: Safety Valve	Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10004755	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**	24-03803				
Manufacturer	COITECH			**Model**	SLKL-08HA74-015				
Cert No.	Declaration of Conformity By COITECH SLKL-08HA74-015			**Equipment Ambient Temp.**	-20 °C to +180 °C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	NA

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	NA	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PSV-038	: Safety Valve			Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004755		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PSV-038	: Safety Valve		Dwg	123A90-FDL-PP-DI-00093-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10004755	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

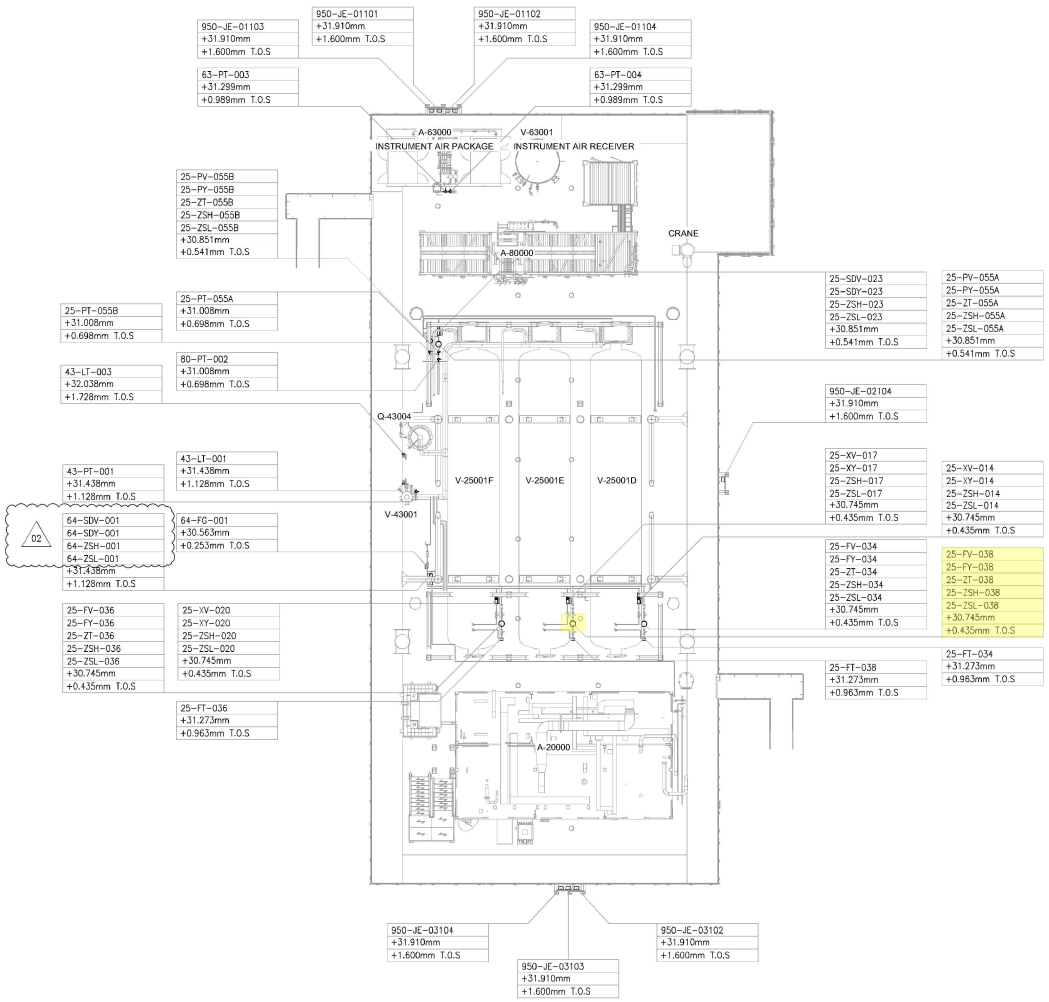
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-01-25	2025-01-28	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-25T14:01:43.803Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-28T17:35:09.443Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

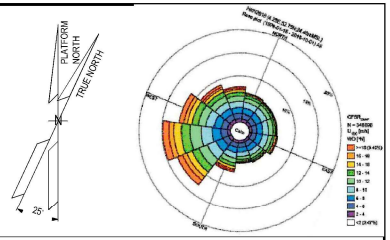
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

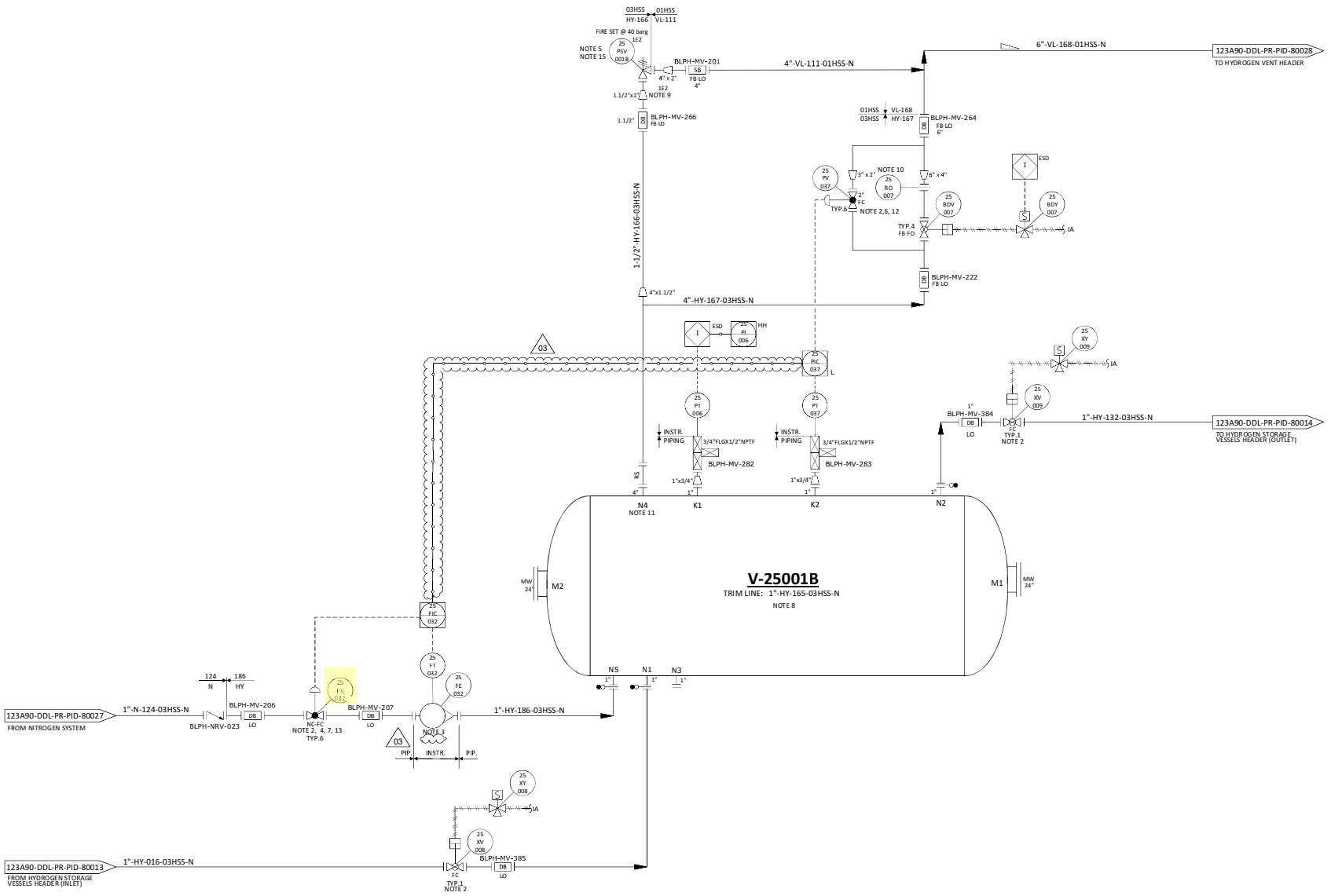
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_B

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-032) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-037 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC."PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-037 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-032 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-037 HAS FAILED TO CLOSE.
15. 25-PSV-001B SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

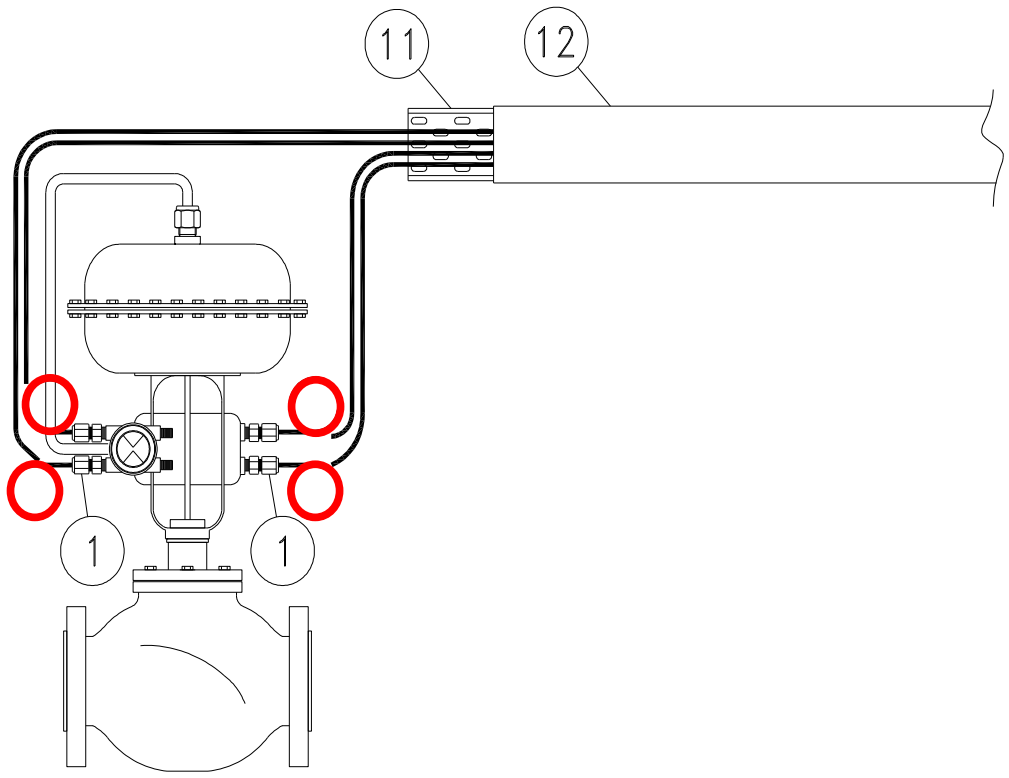
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL B

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80016		SHEET 001 / REV. 03

File Name : FILE_NAME

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
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NOTE:

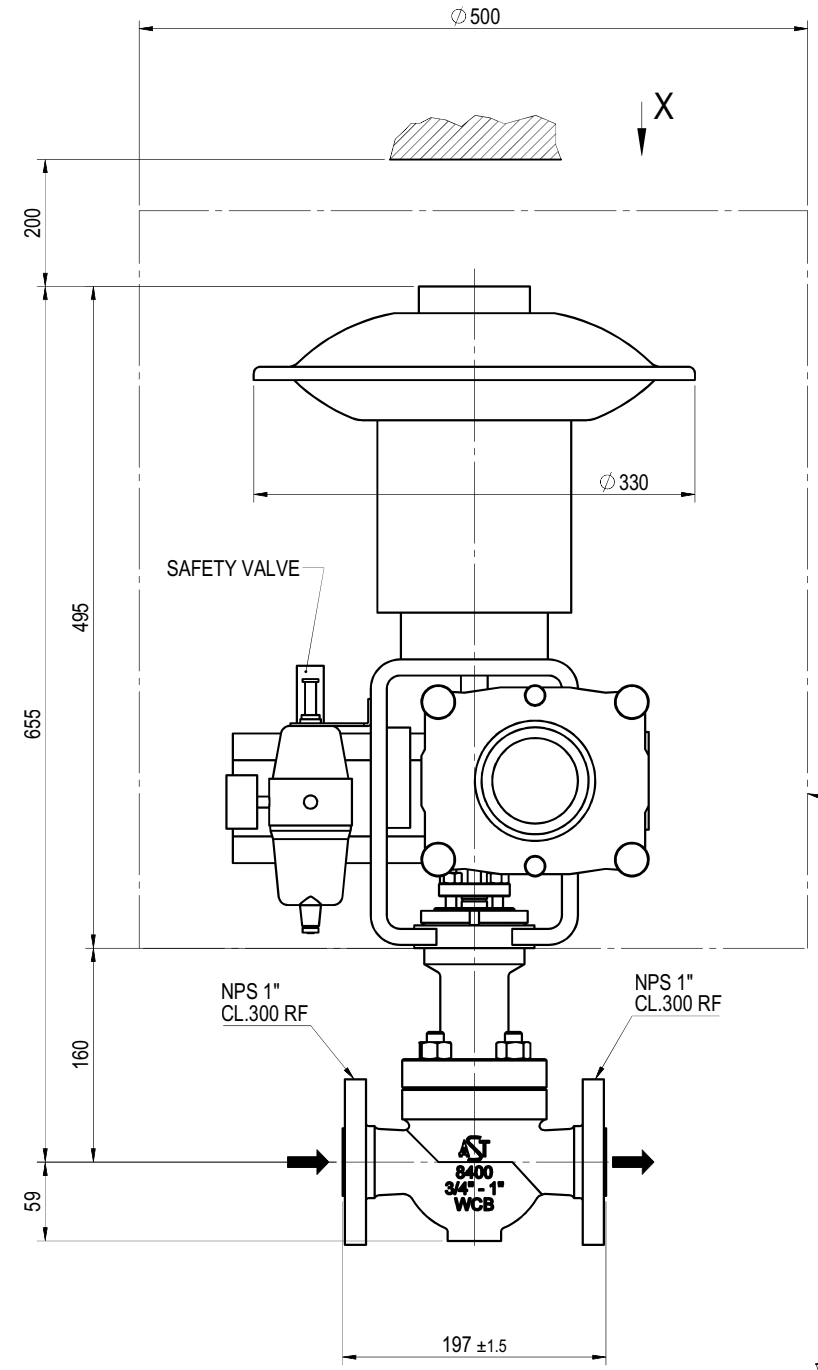
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

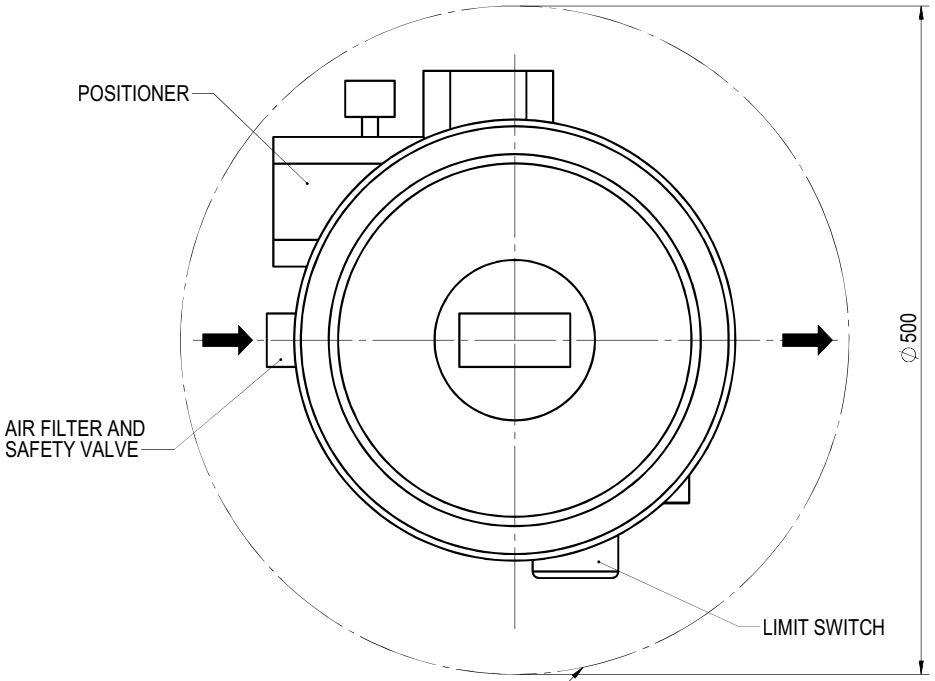
ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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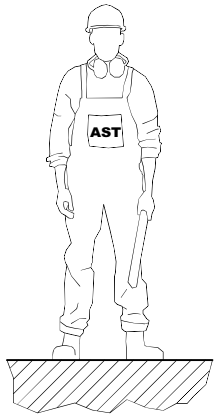
UPPER VIEW FROM "X"



MAXIMUM ACCESSORIES
OVERALL DIMENSION

POSITIONER ON BACK SIDE

MASS:
VALVE= ~ 12 kg
ACTUATOR= ~ 28 kg
TOTAL= ~ 40kg



General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-FV-031, 25-FV-032, 25-FV-033, 25-FV-034, 25-FV-036, 25-FV-038
Matricole / Serials	2400583, 2400584, 2400585, 2400586, 2400587, 2400588

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale

Mass kg

CR 00298

NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 1" PORT 1/4" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0100OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (MI) - Tel.02 934848.1 - Control valve division

GENERAL	1	Tag Number	P&ID Number			25-FV-038		123A90-DDL-PR-PID-80019	
	2	Service				NITROGEN FROM NITROGEN SYSTEM (U-64000) TO HYDROGEN STORAGE VESSEL (V-25001E)			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			1"-HY-189-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312 Gr.TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			NITROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 barg		100 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	17	Flow Rate (Gas)				Nm^3/h		40	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg		7	
	20	Pressure Drop				bar		max 7 - min 4	
	21	Inlet Temperature				°C		15	
	22	Inlet Density / Specific Gravity				kg/m^3		9.3	
	23	Inlet Compressibility Factor				-		0.99	
	24	Inlet Viscosity				cP		0.017	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-		1.4	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-		28	
CALCULATED RESULTS	28	Flow Coefficient Cv						0.3678 / 0.3846	
	29	Travel				75.6%			
	30	Sound Pressure Level				77.27 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HS03C02RFH)			
	33	Body Size	Trim Size			1"		1/4"	
	34	Rated Cv	Characteristics.			0.85		Equal% (11)	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 36L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				PTFE (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured (12, 13)			
	44	Rated Travel				13mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 1 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 14 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

ACTUATOR	50	MFR	Model	AST	SD11R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		15-30 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	(*)	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

ROSETTI MARINO

Sheet 15 of 37

Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PG-032	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-033	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PG-034	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PG-035	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PG-036	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-037	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PG-038	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-040	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-043	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-046	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-049	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PG-055A	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PG-055B	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PSV-001A	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291498	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-001B	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291500	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001C	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291501	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001D	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291502	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001E	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291503	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001F	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291504	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PSV-031	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03790	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-032	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03791	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-033	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03792	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PSV-034	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03793	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PSV-035	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03796	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-036	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03794	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-037	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03797	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-038	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03795	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-040	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03798	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-043	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03799	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-046	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03800	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-049	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03801	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PSV-055A	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03802	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6

SAFETY VALVES

UE / EU

DICHIARAZIONE DI CONFORMITA'

DECLARATION OF CONFORMITY

In accordo alla direttiva europea 2014/34/UE – (ATEX) CATEGORY 2 GROUP II DG, NON ELETTRICO
Ed alle seguenti norme armonizzate: EN ISO 80079-36:2016, EN ISO 80079-37:2016

According to the European directive 2014/34/EU – (ATEX) CATEGORY 2 GROUP II DG, NON ELECTRICAL
And to the following harmonized std: EN ISO 80079-36:2016, EN ISO 80079-37:2016

Prescrizioni particolari: il pericolo derivante da elevate temperature di superficie, è funzione del fluido di processo e non delle caratteristiche della valvola di sicurezza.
Particular prescription: hazard due to high surface temperature is function of the process medium and not of safety valve characteristics.

Descrizione prodotto / *Product Description:*	**VALVOLE DI SICUREZZA** **SAFETY RELIEF VALVE**
Serie valvola / *Valve series:*	**SLK**
Codice valvola / *Valve code:*	**SLKL-08HA74-015**
Matricola / *Serial Number:*	**24-03795**
Rif. n° d'ordine / Ref. Order n°:	**AO2400788**

N° certificato / *Certificate n°:*	**557/Ex-Ab 3487/21**
Fascicolo tecnico / Technical pamphlet:	**FT V.S. ATEX rev 03**
N° identificazione / Identification n°:	**CE 0035**
Nome e indirizzo dell'organismo notificato: *Name and address of the notified body*	TÜV Rheinland Industrie Service GmbH Am Grauen Stein - 51105 Koln - Germany

Data / Date: 07/10/2024

Nome e posizione / Name and position: *Simos Xeniadis / Sales Director*

Firma autorizzata / Authorized signature:

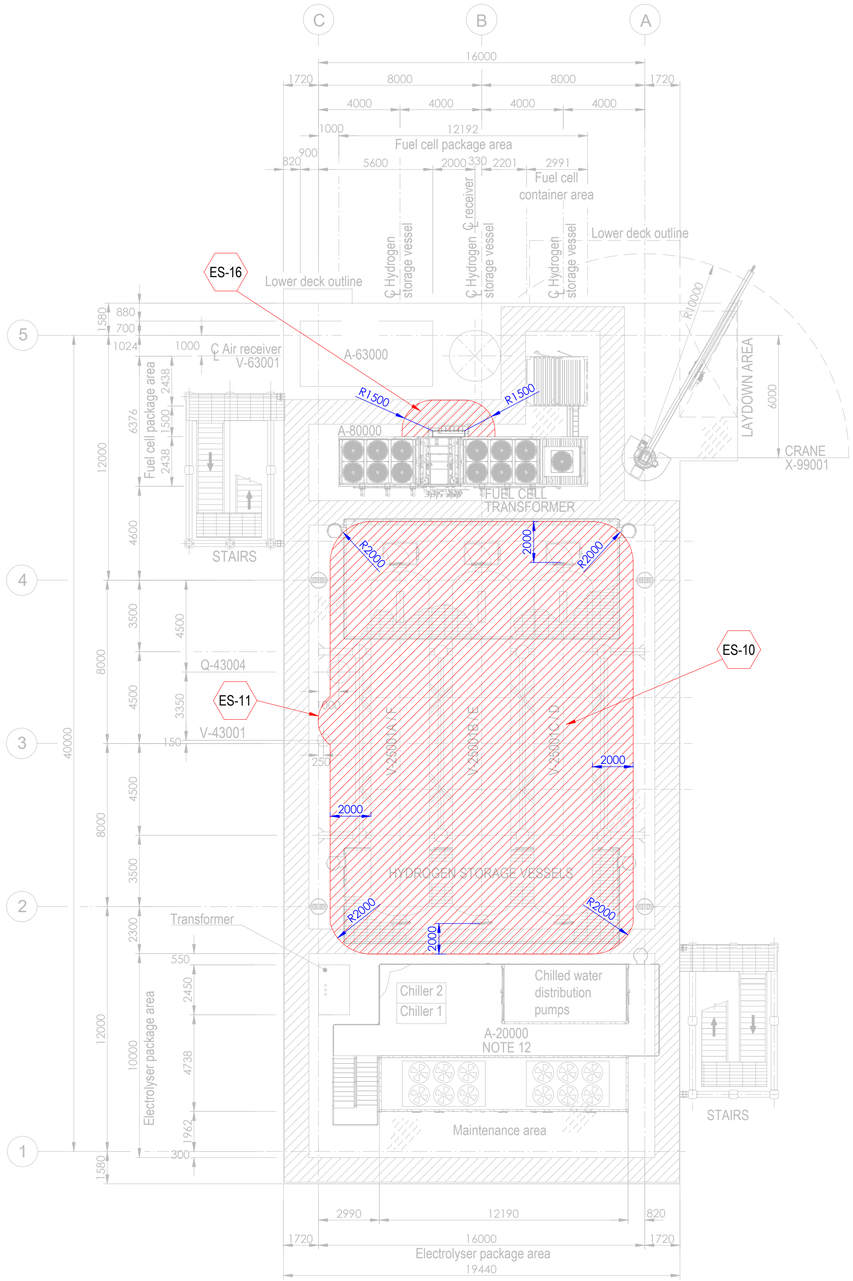
This declaration of conformity is issued under the sole responsibility of the manufacturer

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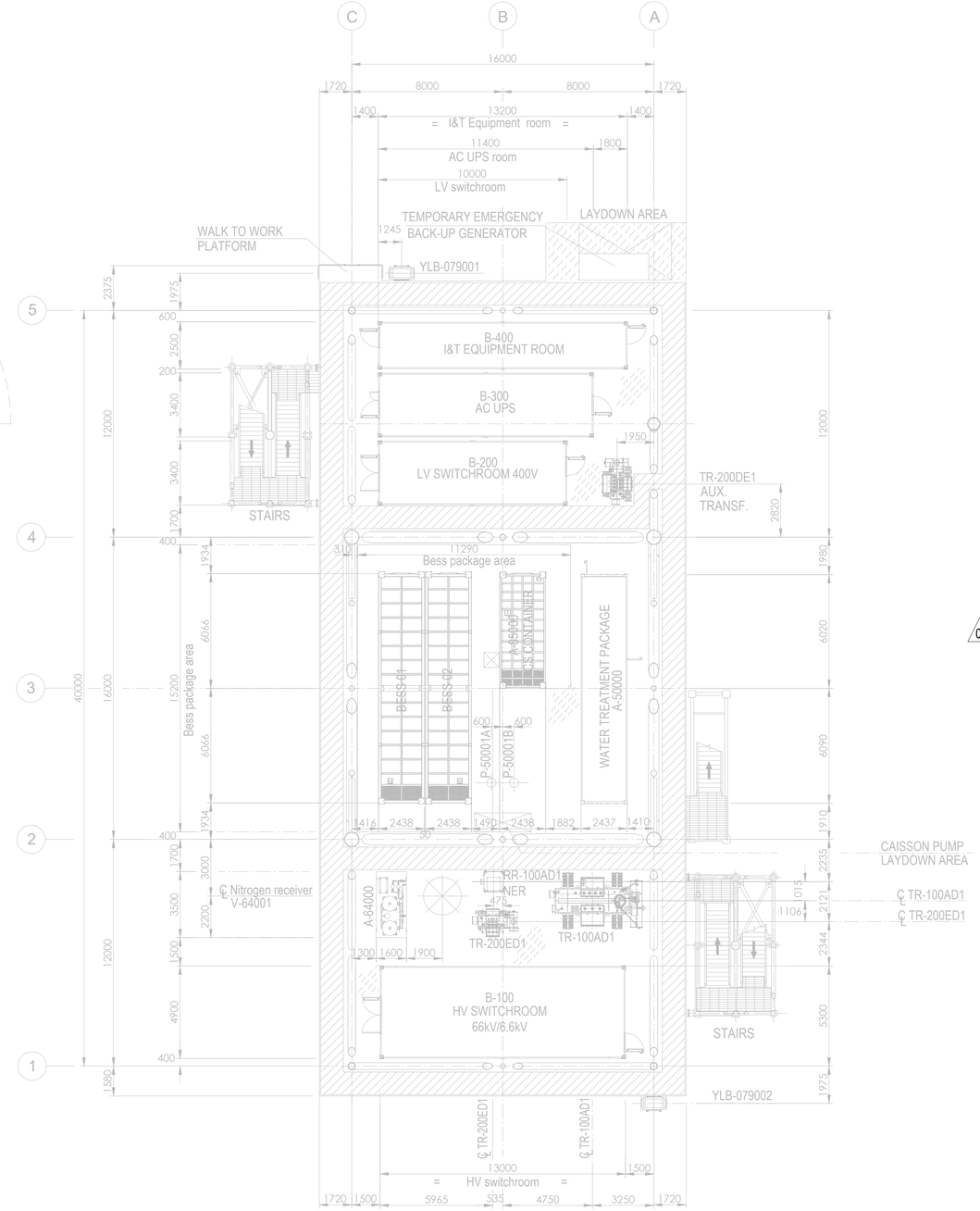
Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583	Declaration of Conformity By AST_ATEX- SN "2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584	Declaration of Conformity By AST_ATEX- SN "2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585	Declaration of Conformity By AST_ATEX- SN "2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586	Declaration of Conformity By AST_ATEX- SN "2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587	Declaration of Conformity By AST_ATEX- SN "2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588	Declaration of Conformity By AST_ATEX- SN "2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589	Declaration of Conformity By AST_ATEX- SN "2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590	Declaration of Conformity By AST_ATEX- SN "2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591	Declaration of Conformity By AST_ATEX- SN "2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592	Declaration of Conformity By AST_ATEX- SN "2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593	Declaration of Conformity By AST_ATEX- SN "2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594	Declaration of Conformity By AST_ATEX- SN "2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595	Declaration of Conformity By AST_ATEX- SN "2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596	Declaration of Conformity By AST_ATEX- SN "2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597	Declaration of Conformity By AST_ATEX- SN "2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598	Declaration of Conformity By AST_ATEX- SN "2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-046	Air set Pressure Gauge Filter	3"-HY-180-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-049	Air set Pressure Gauge Filter	3"-HY-184-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055A	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055B	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031A	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031B	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-031	Safety Valve	1"-HY-153-03HSS-N	COITECH	SLK	24-03790	CE Ex - II

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



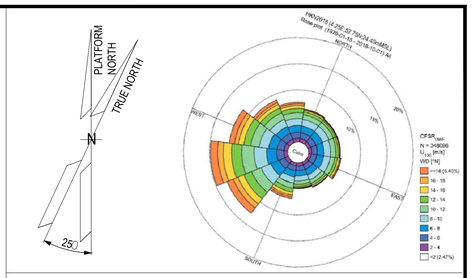
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

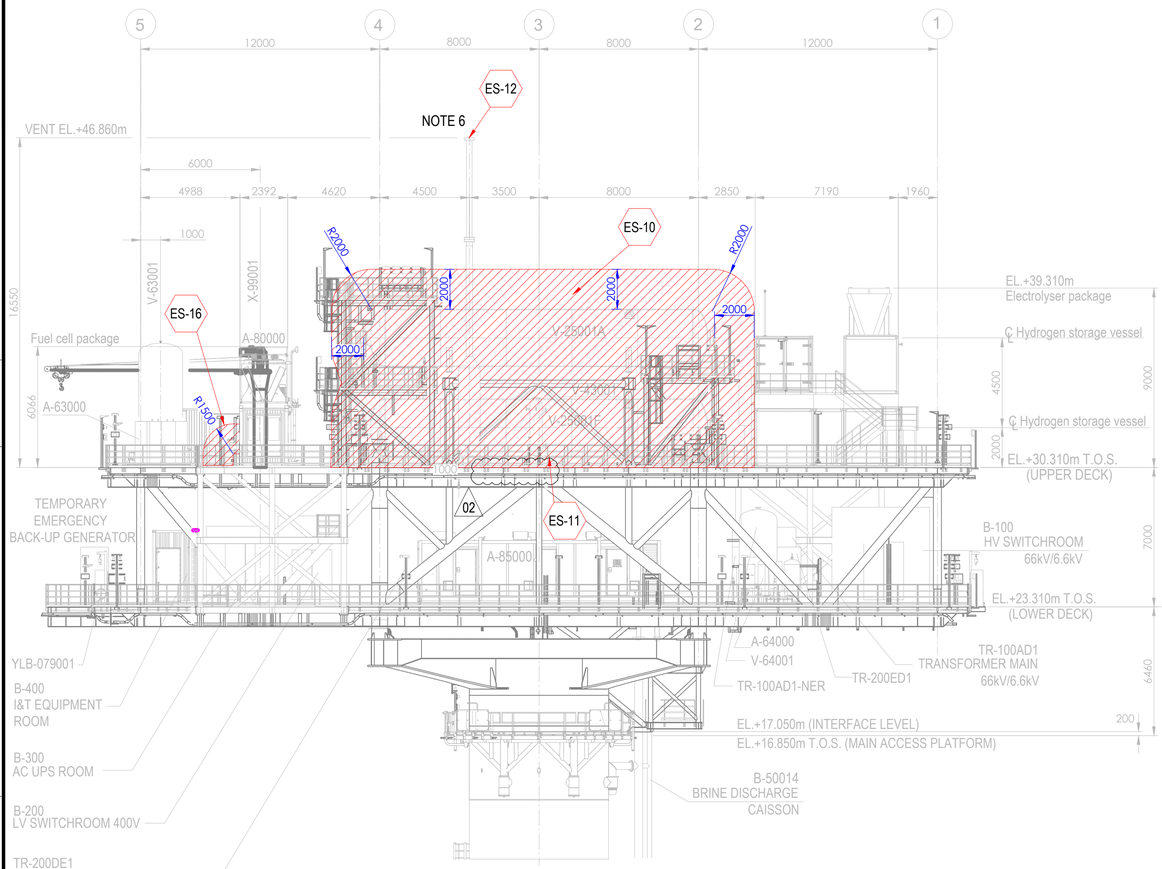
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

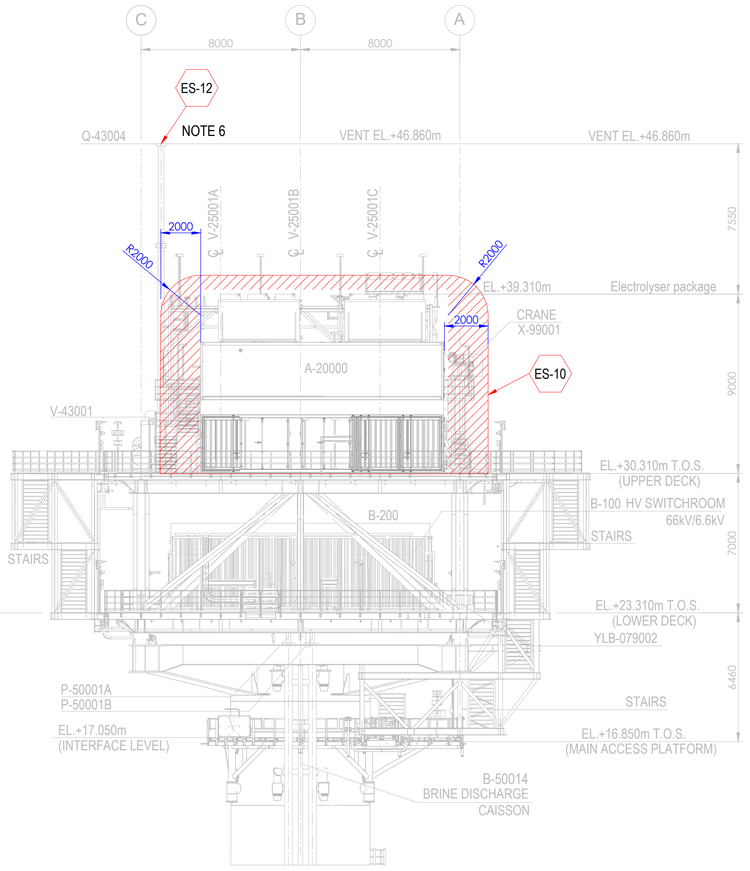
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

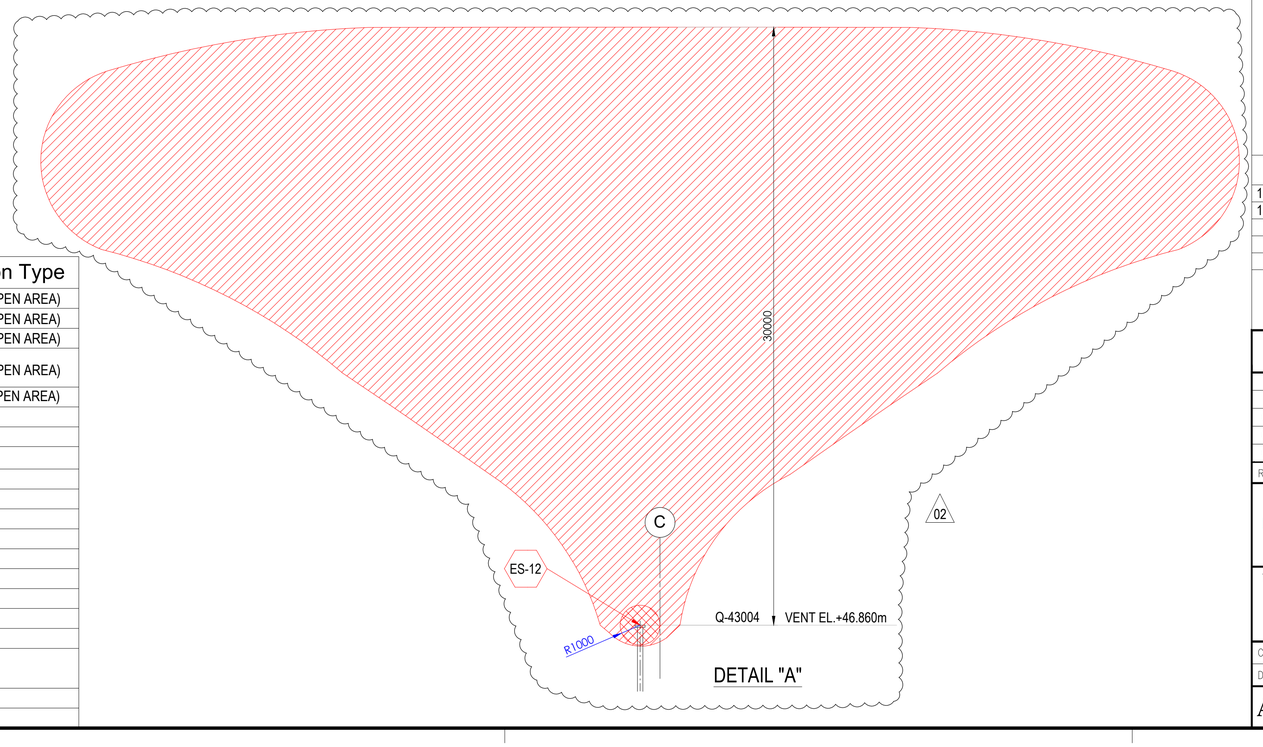


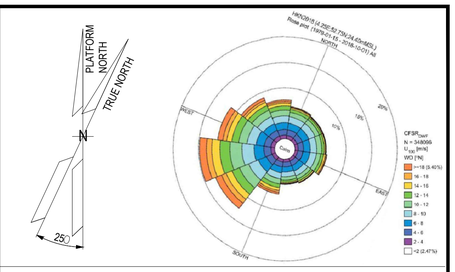
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PSV-046	: Safety Valve	Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD
TASK	code	C10004760	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity: CCK / Discipline: ATEX / Form: CJX01		Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		24-03797			
Manufacturer	COITECH			**Model**		SLKL-08HA74-015			
Cert No.	Declaration of Conformity By COITECHSLKL-08HA74-015			**Equipment Ambient Temp.**		-20 °C to +180 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	NA

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PSV-046	: Safety Valve			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004760		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PSV-046	: Safety Valve		Dwg	123A90-FDL-PP-DI-00084-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10004760	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

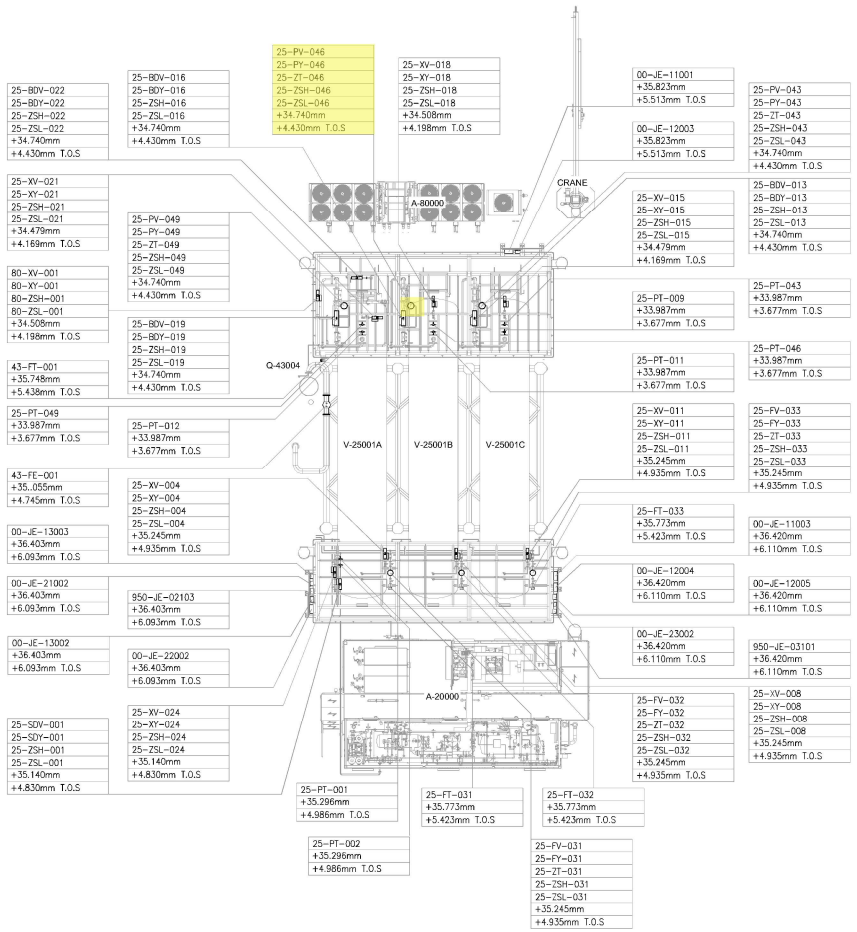
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-10	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-10T12:36:08.946Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-17T12:39:05.943Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

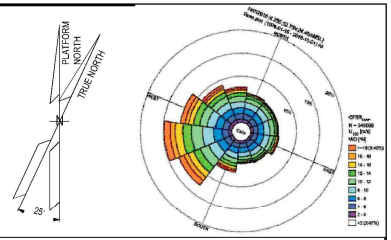
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

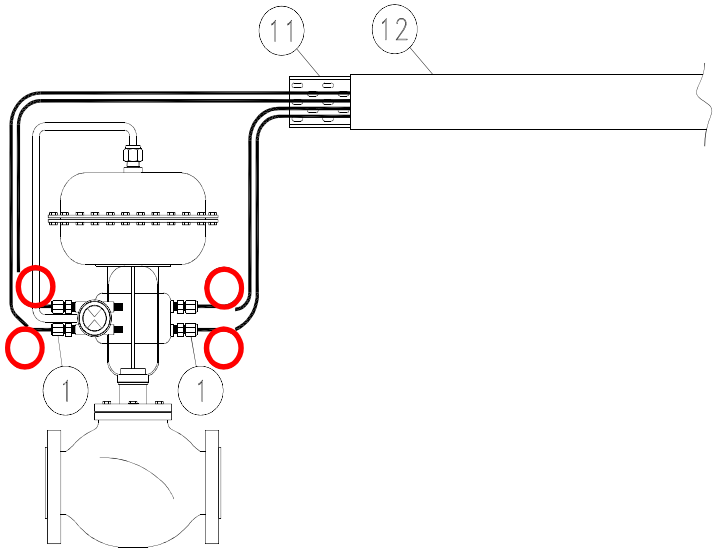
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

ELECTRICAL HOOK-UP FOR CONTROL VALVE (N.1 ELECTROPOS. + N.1 POSITION TRASM.+ 2 LIMIT SWITCH)



	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-036
6	25-FV-038
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
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25	
26	
27	
28	
29	
30	

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_D	13/11/24	G.Randi

ROSETTI MARINO SpA

NOTE:

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	4

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The distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

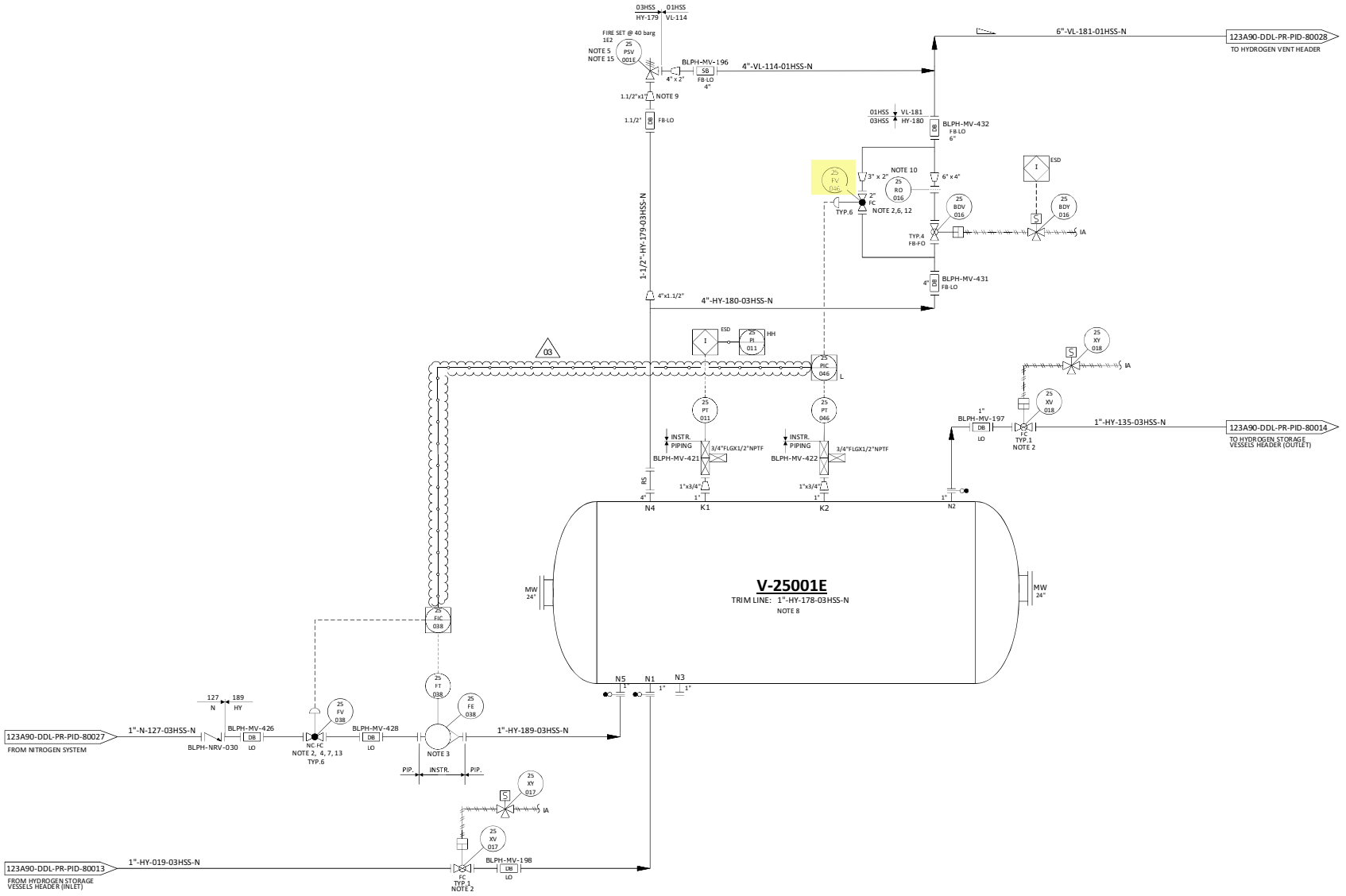
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

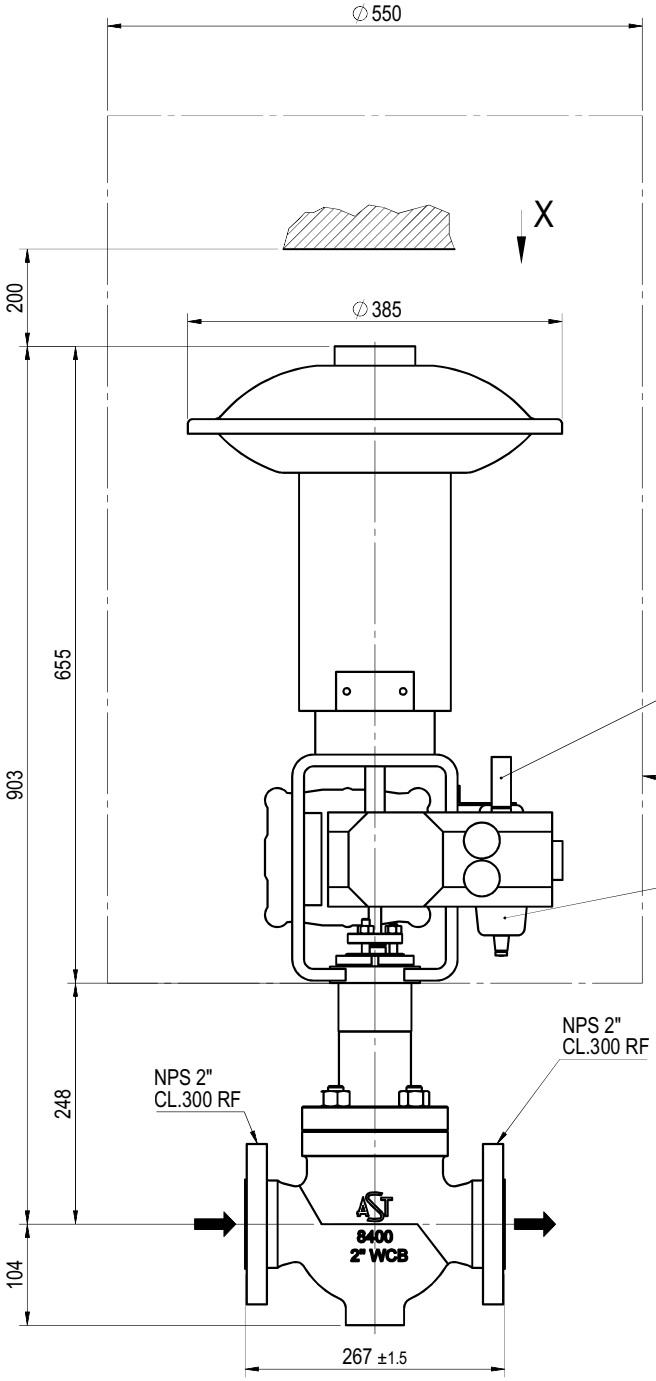
CROSSWIND

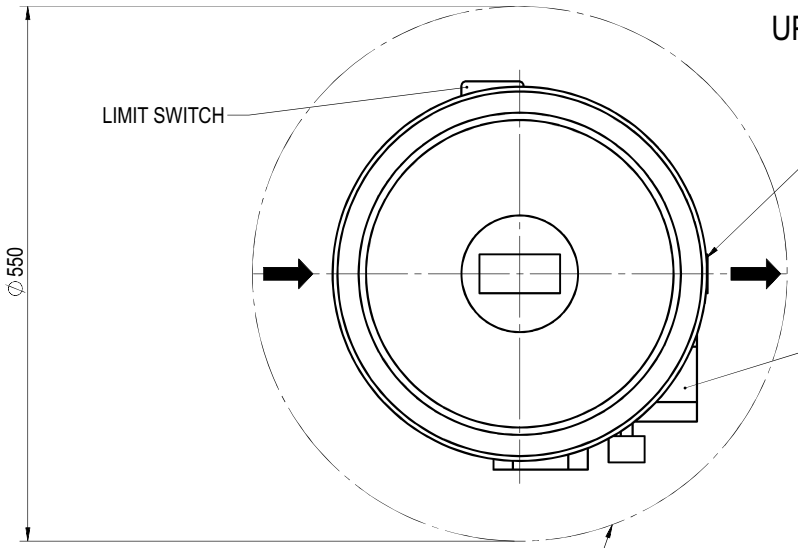
ROSETTI MARINO

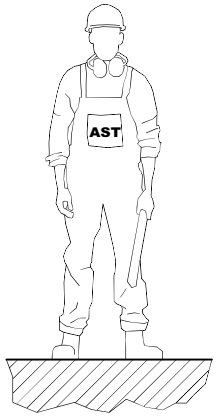
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME







POSITIONER ON FRONT SIDE

MASS:
VALVE= ~ 30 kg
ACTUATOR= ~ 45 kg
TOTAL= ~ 75 kg

General tolerances

For main components:
- up to 500mm ± 25
- over 500mm ± 50

For installed equipments / instrument / tubing:
- all dim. ± 100

Cliente / Customer	ROSETTI MARINO S.P.A.
Ordine AST / AST job	CV2400221
Sigle / Tags	25-PV-035, 25-PV-037, 25-PV-040, 25-PV-043, 25-PV-046, 25-PV-049
Matricole / Serials	2400589, 2400590, 2400591, 2400592, 2400593, 2400594

Revision Description
ADDED ACCESSORIES AS PER CUSTOMER COMMENTS

Drawn	ABD ELSALAM	Checked	PINI	Approval	PEREGO	Date	29-05-24

PROPERTY AND REPRODUCTION ARE SUBJECTED TO THE LAW

Scale | Mass kg | CR 00299 | NOTE:

Description
CV-8407 OVERALL DIMENSION
NPS 2" PORT 1" CL. 300 RF
WITH SOFT SEATING

Dwg No
240221-0200OD

Rev. 1

Sheet 1 of 1

A3 - AST S.p.A. Via R. Merendi, 40 - 20010 Cornaredo (Mi) - Tel.02 934848.1 - Control valve division

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
25-PG-032	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-033	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PG-034	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PG-035	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PG-036	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-037	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PG-038	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-040	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PG-043	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-046	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PG-049	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PG-055A	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PG-055B	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6
25-PSV-001A	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291498	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-001B	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291500	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001C	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291501	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001D	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291502	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-001E	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291503	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-001F	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000518	Technical Srl	Technical Srl	291504	320-E20-5L	Zone 2	Declaration of Conformity by Technical Srl	1724000518-IN-DA-00003 / 1724000518-IN-DS-00004	II 2G Ex h IIC T6..T1 Gb	-	N/A	False	N/A	False	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-PSV-031	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03790	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-032	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03791	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-033	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03792	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-PSV-034	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03793	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-PSV-035	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03796	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-PSV-036	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03794	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-037	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03797	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-PSV-038	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03795	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-040	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03798	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-PSV-043	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03799	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PSV-046	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03800	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-PSV-049	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03801	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-PSV-055A	Safety Valve	LOWER DECK	1724000740	AST SpA	COITECH	24-03802	SLK	ATEX ZONE 2	Declaration of Conformity By COITECH SLKL-08HA74-015	Coitech EU - Type Examination Certificate	CE Ex - II 2 GD Ex h X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6

Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
25-FV-031	Control Valve+Pneumatic Actuator	1"-HY-153-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400583	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400583	Declaration of Conformity By AST_ATEX- SN "2400583	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-032	Control Valve+Pneumatic Actuator	1"-HY-186-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400584	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400584	Declaration of Conformity By AST_ATEX- SN "2400584	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-033	Control Valve+Pneumatic Actuator	1"-HY-187-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400585	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400585	Declaration of Conformity By AST_ATEX- SN "2400585	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-034	Control Valve+Pneumatic Actuator	1"-HY-188-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400586	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400586	Declaration of Conformity By AST_ATEX- SN "2400586	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-036	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400587	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400587	Declaration of Conformity By AST_ATEX- SN "2400587	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-038	Control Valve+Pneumatic Actuator	1"-HY-190-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400588	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400588	Declaration of Conformity By AST_ATEX- SN "2400588	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-035	Control Valve+Pneumatic Actuator	3"-HY-142-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400589	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400589	Declaration of Conformity By AST_ATEX- SN "2400589	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-037	Control Valve+Pneumatic Actuator	3"-HY-167-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400590	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400590	Declaration of Conformity By AST_ATEX- SN "2400590	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-040	Control Valve+Pneumatic Actuator	3"-HY-171-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400591	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400591	Declaration of Conformity By AST_ATEX- SN "2400591	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-043	Control Valve+Pneumatic Actuator	3"-HY-175-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400592	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400592	Declaration of Conformity By AST_ATEX- SN "2400592	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-046	Control Valve+Pneumatic Actuator	3"-HY-180-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400593	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400593	Declaration of Conformity By AST_ATEX- SN "2400593	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-049	Control Valve+Pneumatic Actuator	3"-HY-184-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400594	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400594	Declaration of Conformity By AST_ATEX- SN "2400594	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055A	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400595	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400595	Declaration of Conformity By AST_ATEX- SN "2400595	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-FV-055B	Control Valve+Pneumatic Actuator	1-1/2"-HY-148-03HSS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400596	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400596	Declaration of Conformity By AST_ATEX- SN "2400596	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031A	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400597	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400597	Declaration of Conformity By AST_ATEX- SN "2400597	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-FV-031B	Control Valve+Pneumatic Actuator	1"-N-158-01CS-N	AST SpA	CV-8407 + Pneumatic Diaphragm SD11R	2400598	CE Ex - II 2 G Ex h IIC T6..T1 Gb X	AST Decl.Atex SN:2400598	Declaration of Conformity By AST_ATEX- SN "2400598	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-ZSHL-031	Open/Close Limit Switches	1"-HY-153-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-032	Open/Close Limit Switches	1"-HY-186-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-033	Open/Close Limit Switches	1"-HY-187-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-034	Open/Close Limit Switches	1"-HY-188-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-036	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-038	Open/Close Limit Switches	1"-HY-190-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-035	Open/Close Limit Switches	3"-HY-142-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-037	Open/Close Limit Switches	3"-HY-167-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-040	Open/Close Limit Switches	3"-HY-171-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-043	Open/Close Limit Switches	3"-HY-175-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-046	Open/Close Limit Switches	3"-HY-180-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-049	Open/Close Limit Switches	3"-HY-184-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055A	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-ZSHL-055B	Open/Close Limit Switches	1-1/2"-HY-148-03HSS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031A	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-ZSHL-031B	Open/Close Limit Switches	1"-N-158-01CS-N	EISENBAU	GUARDABOX - GD SERIES GDSN0LIS2MS290	Batch:44219	CE Ex - II 2G Ex db IIC T6..T4	Fiditas EU - Type Examination Certificate	FIDI 20 ATEX 0039X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-031	Positioner	1"-HY-153-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050879	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-032	Positioner	1"-HY-186-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050880	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-033	Positioner	1"-HY-187-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050881	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-034	Positioner	1"-HY-188-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050882	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-036	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050883	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-038	Positioner	1"-HY-190-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050884	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-035	Positioner	3"-HY-142-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050885	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-037	Positioner	3"-HY-167-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050886	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-040	Positioner	3"-HY-171-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050887	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-043	Positioner	3"-HY-175-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050888	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-046	Positioner	3"-HY-180-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050889	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-049	Positioner	3"-HY-184-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050890	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055A	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050891	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-FY-055B	Positioner	1-1/2"-HY-148-03HSS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050892	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031A	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050893	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
64-FY-031B	Positioner	1"-N-158-01CS-N	TISSIN	TS 900 Series	TI-TS905LC41S30 - 24050894	CE Ex - Ex db IIC T5/T6	Tissin EU - Type Examination Certificate	EPS 19 ATEX 1 112 X	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	NO	YES
25-SV-031	Air set Filter	1"-HY-153-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-032	Air set Filter	1"-HY-186-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-033	Air set Filter	1"-HY-187-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-034	Air set Filter	1"-HY-188-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-036	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-038	Air set Filter	1"-HY-190-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-035	Air set Filter	3"-HY-142-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-037	Air set Filter	3"-HY-167-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-040	Air set Filter	3"-HY-171-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-043	Air set Filter	3"-HY-175-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-046	Air set Filter	3"-HY-180-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-049	Air set Filter	3"-HY-184-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055A	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-SV-055B	Air set Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031A	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-SV-031B	Air set Filter	1"-N-158-01CS-N	SITECNA	FR04	FR08411S00SSNB2 TRACE 24/1638	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-031	Air set Pressure Gauge Filter	1"-HY-153-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-032	Air set Pressure Gauge Filter	1"-HY-186-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-033	Air set Pressure Gauge Filter	1"-HY-187-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-034	Air set Pressure Gauge Filter	1"-HY-188-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-036	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-038	Air set Pressure Gauge Filter	1"-HY-190-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-035	Air set Pressure Gauge Filter	3"-HY-142-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-037	Air set Pressure Gauge Filter	3"-HY-167-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-040	Air set Pressure Gauge Filter	3"-HY-171-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-043	Air set Pressure Gauge Filter	3"-HY-175-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-046	Air set Pressure Gauge Filter	3"-HY-180-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-049	Air set Pressure Gauge Filter	3"-HY-184-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055A	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PG-055B	Air set Pressure Gauge Filter	1-1/2"-HY-148-03HSS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031A	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
64-PG-031B	Air set Pressure Gauge Filter	1"-N-158-01CS-N	SITECNA	FR04 Pressure Gauge	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	CE Ex - 2G Ex h IIC T6/T5 Gb X	Sitecna EU - Type Examination Certificate	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	ATEX ZONE 2	N/A	1724000740	AST SpA	N.A.	N.A.	YES	YES
25-PSV-031	Safety Valve	1"-HY-153-03HSS-N	COITECH	SLK	24-03790	CE Ex - II

SAFETY VALVES

UE / EU

DICHIARAZIONE DI CONFORMITA'

DECLARATION OF CONFORMITY

In accordo alla direttiva europea 2014/34/UE – (ATEX) CATEGORY 2 GROUP II DG, NON ELETTRICO
Ed alle seguenti norme armonizzate: EN ISO 80079-36:2016, EN ISO 80079-37:2016

According to the European directive 2014/34/EU – (ATEX) CATEGORY 2 GROUP II DG, NON ELECTRICAL
And to the following harmonized std: EN ISO 80079-36:2016, EN ISO 80079-37:2016

Prescrizioni particolari: il pericolo derivante da elevate temperature di superficie, è funzione del fluido di processo e non delle caratteristiche della valvola di sicurezza.
Particular prescription: hazard due to high surface temperature is function of the process medium and not of safety valve characteristics.

Descrizione prodotto / *Product Description:*	**VALVOLE DI SICUREZZA** **SAFETY RELIEF VALVE**
Serie valvola / *Valve series:*	**SLK**
Codice valvola / *Valve code:*	**SLKL-08HA74-015**
Matricola / *Serial Number:*	**24-03800**
Rif. n° d'ordine / Ref. Order n°:	**AO2400788**

N° certificato / *Certificate n°:*	**557/Ex-Ab 3487/21**
Fascicolo tecnico / Technical pamphlet:	**FT V.S. ATEX rev 03**
N° identificazione / Identification n°:	**CE 0035**
Nome e indirizzo dell'organismo notificato: *Name and address of the notified body*	TÜV Rheinland Industrie Service GmbH Am Grauen Stein - 51105 Koln - Germany

Data / Date: 07/10/2024

Nome e posizione / Name and position: *Simos Xeniadis / Sales Director*

Firma autorizzata / Authorized signature:

This declaration of conformity is issued under the sole responsibility of the manufacturer

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E-mail: info@coitech.it - Web Site: www.coitech.it

GENERAL	1	Tag Number	P&ID Number			25-PV-046		123A90-DDL-PR-PID-80019	
	2	Service				HYDROGEN FROM STORAGE VESSEL (V-25001E) TO HYDROGEN VENT HEADER			
	3	Area Classification	Certification			ATEX ZONE 2		Ex-d IIC (or IIB+H2) T1	
	4	Ambient Temperature:	Min.	Max.		°C		-8.4	+25
	5	Allowable Sound Pressure Level dBA				Max 85 dBA			
	6	Ingress Protection	Power Failure Position			IP-66		-	CLOSE
	7	Air Supply Pressure:	Min.	Norm.	Max.	barg	4	9	10
PIPELINE	8	Line Number	Pipe Insulation			3"-HY-180-03HSS-N			NOT INSULATED (PAINTED)
	9	Line Size and Schedule	Inlet	Outlet		3" / 3.05 mm		3" / 3.05 mm	
	10	Line Spec	Line Material			03HSS		ASTM A312/TP316/316L	
PROCESS CONDITION	11	Process Fluid	Fluid Phase			HYDROGEN		GAS	
	12	Upstream Condition							
	13	Des. Press. / Full Vac.	Des. Temperature Min / Max			40 Barg		80 °C	
	14	Critical Pressure	Critical Temperature						
	15	Differential Pressure - Maximum Shut Off				40 bar			
	16					Units	N2	H2	
	17	Flow Rate (Gas)				Nm^3/h	40	500	
	18	Flow Rate (Liquid)							
	19	Inlet Pressure				barg	min 1 - max 4	min 1 - max 4	
	20	Pressure Drop				bar	0.7	0.7	
	21	Inlet Temperature				°C	AMB	AMB	
	22	Inlet Density / Specific Gravity				kg/m^3	2.3 - 5.8	0.16 - 0.41	
	23	Inlet Compressibility Factor				-	1	1	
	24	Inlet Viscosity				cP	0.01	0,01	
	25	Inlet Specific Heats Ratio (Cp/Cv)				-	1.3	1.3	
	26	Inlet Vapour Pressure							
	27	Molecular Weight				-	28	2	
CALCULATED RESULTS	28	Flow Coefficient Cv					1.719 / 0.9689	5.772 / 3.241	
	29	Travel				80.8%			
	30	Sound Pressure Level				83.01 dBA (20)			
BODY AND TRIM	31	MFR	Model			AST		CV-8407	
	32	Body Type				GLOBE VALVE (HT03C02RFH)			
	33	Body Size	Trim Size			2"		1"	
	34	Rated Cv	Characteristics.			13		(11) Equal%	
	35	End Connec. & Rating				FLANGED ASME B16.5 / #300			
	36	Body Material				ASTM A351 CF3M			
	37	Bonnet Type	Material			Bolted (21)		A479 316L	
	38	Bolting				A193 B8M Cl. 2 / A194 8M			
	39	Packing Material				Grafite - VF1 (37)			
	40	Flow Action To				OPEN			
	41	Lubricator	Isolat. Valve			-		By Contractor	
	42	Guiding	No. of Ports			Top Guided		1	
	43	Trim Type				Contoured Plug (12, 13)			
	44	Rated Travel				25mm			
	45	Plug/ Ball/ Disk Material				A479 316L + PTFE			
	46	Seat Material				A479 316L (12)			
	47	Cage	Stem Material			-		A479 316L	
	48	Gasket Material				By Contractor (in line)			
	49	Flange Finish				RF			

						INSTRUMENT DATASHEET	CROSSWIND	
						Control Valve (Sheet 1 of 2)	ROSETTI MARINO	
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO		Sheet 26 of 37	
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO			
No.	Date	Description	By	Chkd	Appr	Code:	Dwg.No 123A90-DDL-IN-DS-40036	Rev. 01

ACTUATOR	50	MFR	Model	AST	SD13R
	51	Type		PNUEMATIC / DIAPHRAGM (*)	
	52	Size	Area	SD11R	(*)
	53	Handwheel		NOT REQUIRED	
	54	Bench Range		20-44 psi	
	55	Volume Tank		NOT REQUIRED	
TESTS	56	Hydro. Pressure		REQUIRED	
	57	Leakage		REQUIRED (37)	
	58				
POSITIONER	59	MFR	Model	TISSIN	TS900 (15, 16)
	60	Signal: Inlet	Outlet	4-20 mA	3 to 15 psi
	61	Increase Signal Valve:		OPEN VALE	
	62	Cam Characteristic		(*)	
	63	Bypass	Gauges	NOT REQ.	YES
	64	Signal Transmission		REQUIRED VALVE POSITION 4-20 mA to PCS (22) (25-ZT-001)	
COMM. & SOFTWARE	65	Comm Type	Signal Type	-	-
	66	D D Rev.	CFF Rev.	-	-
	67	Device Tag	Hart Tag	-	-
	68	Diagnostics	Capac	-	-
	69	Segment	Device Addr.	-	-
	70	Device Class	Simulate	-	-
	71	Nom. Current	Oper Volt	-	-
SOLENOID	72	MFR	Model	-	-
	73	Type		-	
	74	When De-Enegr.Valve:		-	
	75	Schematic Detail		-	
SWITCHES	76	MFR	Model	EISENBAU	GDSN0LIS2MS290
	77	Type	Quantity	Magnetic	2
	78	Contacts / Rating		No. 1 DPDT / 1A	
	79	Switching Position		ON STEAM	
	80				
AIR SET	81	MFR	Model	SITECNA	FR04411S00SSNB2
	82	Set Pressure		Operation Pressure of valve	
	83	Filter	Gauge	YES	YES
ELECT.	84	Connection	Class	No. (*) / M20	-
PURCHASE	85	Manufacturer		AST	
	86	Model		CV-8407	
	87	Purchase Order No.		1724000740	

Notes:
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 6 Barg.
(2) Hydrogen service - Packing ISO 15848-1

No.	Date	Description	By	Chkd	Appr
01	28/08/24	Accepted for Construction (AFC)	VBA	LCA	DLO
00	14/11/23	Issued for Review (IFR)	VBA	LCA	DLO

INSTRUMENT DATASHEET

Control Valve (Sheet 2 of 2)

CROSSWIND

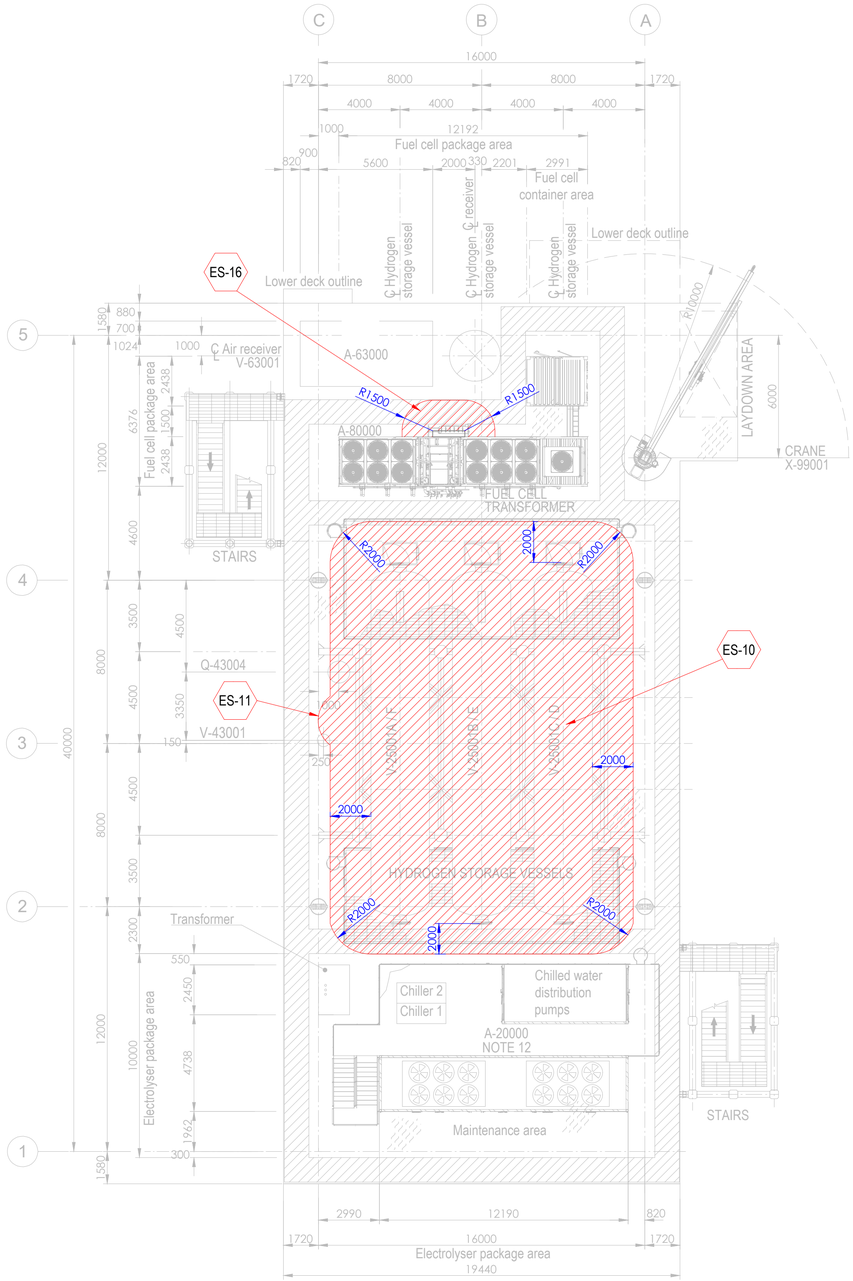
ROSETTI MARINO

Sheet 27 of 37

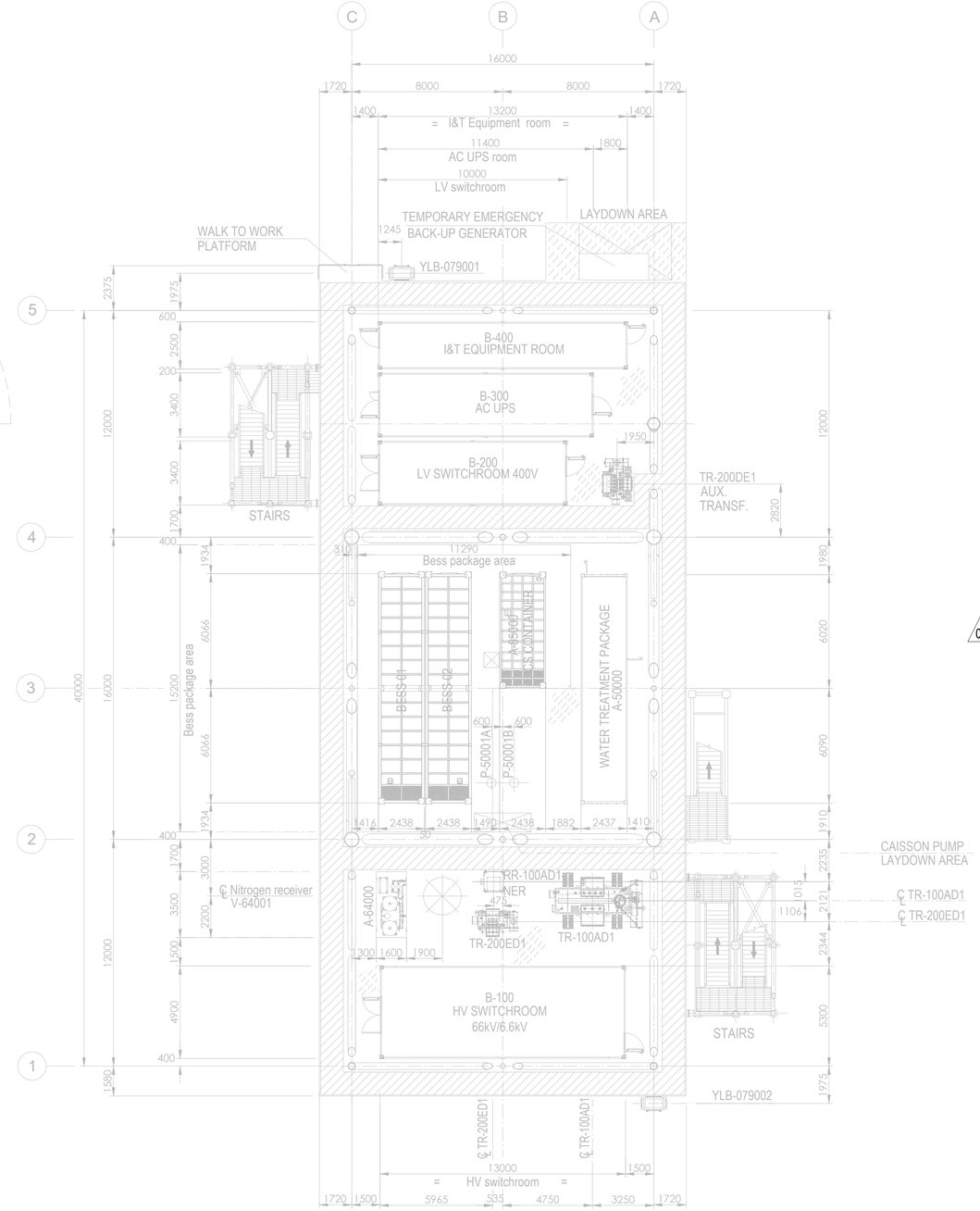
Code: | Dwg.No 123A90-DDL-IN-DS-40036 | Rev. 01

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



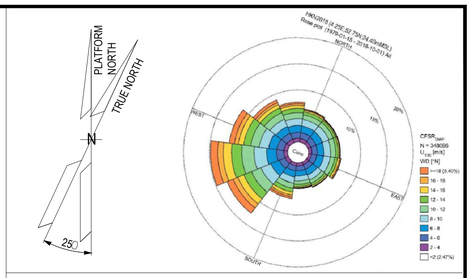
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

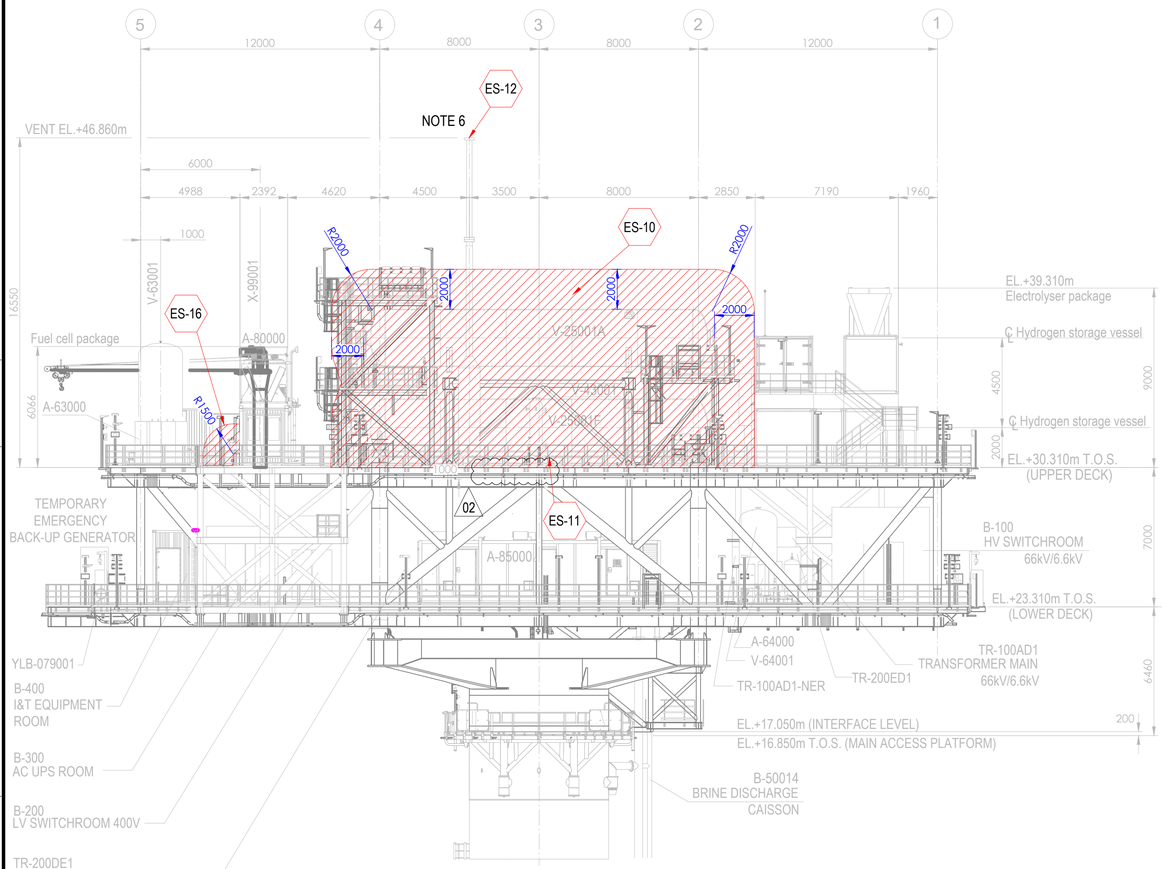
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

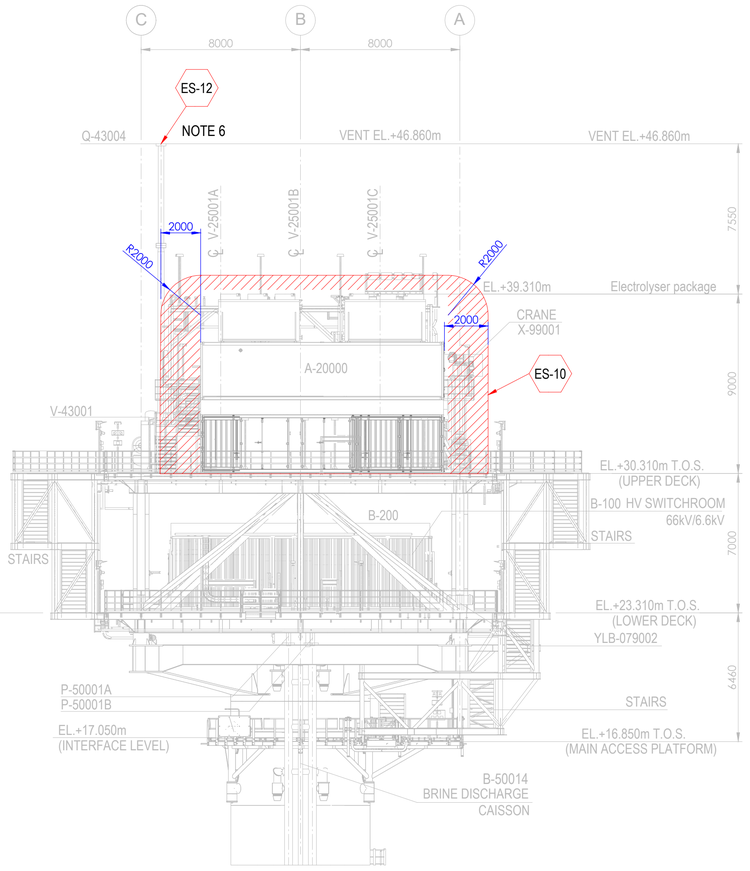
File Name : 123A90-DDL-SAF-DL-30022 Rev.02

DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

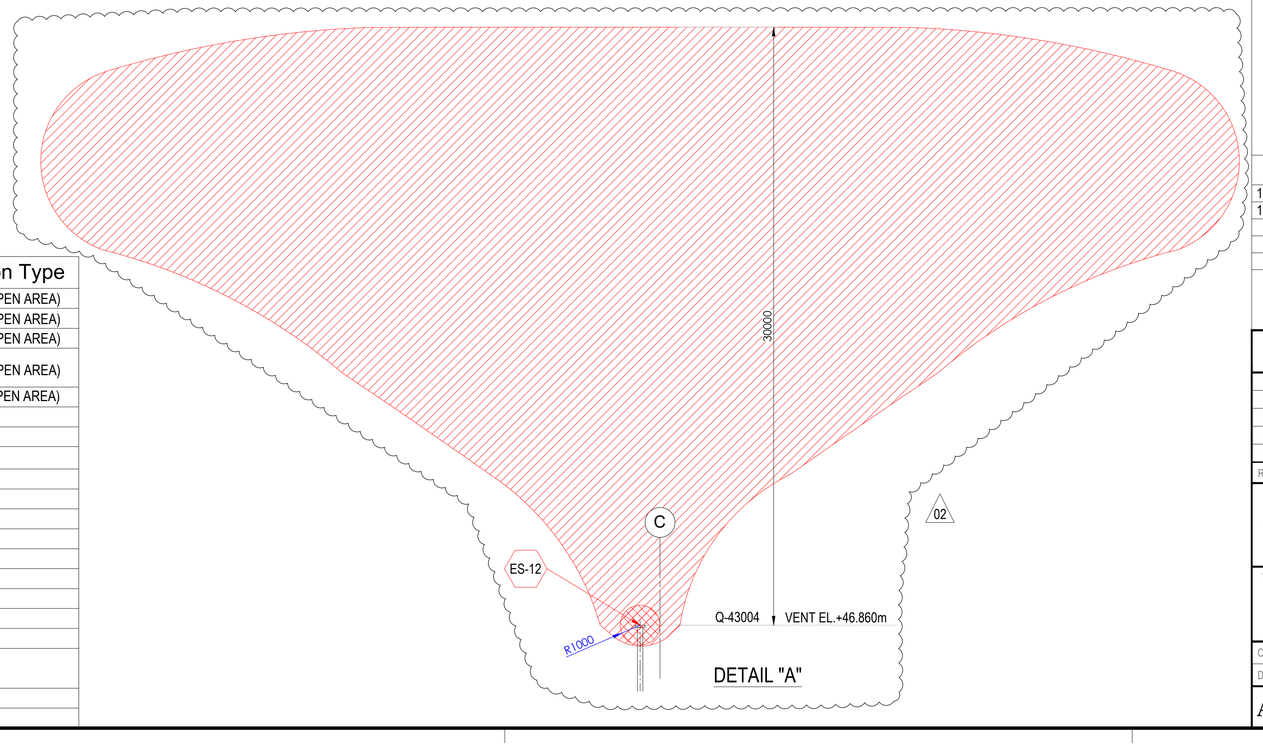


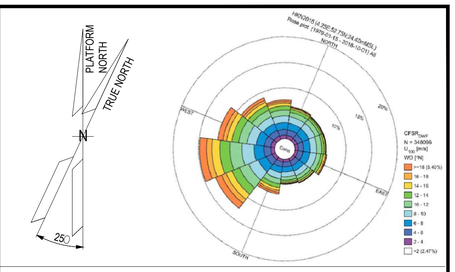
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PG-016	: Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80016		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10004809	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		PW00DE28LJ8			
Manufacturer	Wika			**Model**		233.50.63			
Cert No.	D.o.C. by Manufacturer reference 11564220			**Equipment Ambient Temp.**		-20 °C to +60 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP65

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PG-016	: Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004809		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PG-016	: Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004809		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks					
67	All Terminals are Ex n certified (if required on certificate)	x	NA		
68	Hermetically sealed and enclosed break devices are undamaged	x	NA		
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA		
70	Test port, if fitted, is functional (type “nR” only)	x	NA		
71	Breathing operation is satisfactory (type “nR” only)	x	NA		
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA		
73	The ventilation airflow is not impeded	x	NA		
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA		
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA		
76	Variable voltage/frequency installation complies with documentation	x	NA		
Extra Ex p checks					
77	Pressurization gas is correct type	x	NA		
78	Actual pressure is within maximum and minimum settings for equipment	x	NA		
79	Timers set as per certification documentation	x	NA		
80	Alarms and trip functions operate correctly as per certification documentation	x	NA		
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA		
82	Automatic electrical protective devices operate within permitted limits	x	NA		
83	Automatic electrical protective devices are set correctly	x	NA		
84	Protective gas inlet temperature is below maximum specified	x	NA		
85	Ducts, pipes and enclosures are in good condition	x	NA		
86	Protective gas is substantially free from contaminants	x	NA		
87	Protective gas pressure and/or flow is adequate	x	NA		
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA		
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA		
90	Specific conditions of use (if applicable) are complied with		NA		
Extra Ex i (Intrinsically Safe – IS) checks					
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA		
92	Cables are installed in accordance with the documentation	x	NA		
93	Segregation is maintained between IS and non-IS Circuits	x	NA		
94	Cable screens are isolated at one end (field side)	x	NA		
95	Cable screens are earthed in accordance with the documentation	x	NA		
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA		
97	Equipment installed is the one specified in the documentation	x	NA		
98	Ambient temperature range of the apparatus is correct for the installation	x	NA		
99	Service temperature range of the apparatus is correct for the installation	x	NA		
100	Installation is clearly labelled	x	NA		
101	Printed circuit boards are clean and undamaged	x	NA		
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA		
103	Point-to-point connections are all correct	x	NA		
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA		
105	Earth connections maintain the integrity of the type of protection	x	NA		
106	Intrinsically safe circuit earthing is satisfactory	x	NA		
107	Insulation resistance is satisfactory	x	NA		
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA		

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VENDOR ROTORK (PER FLUITEK)	RM (ROSETTI MARINO)	
Name	Stefano Linari	Giovanni Tangianu	
Date	2025-04-24	2025-04-24	
Signature	PROVERLIS Digitaly signed by Stefano Linari 2025-04-24T13:19:18.841Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-04-24T14:36:47.001Z	

ROTORK CONTROLS ITALIA srl
Via Portico 17
24050 Orio Al Serio (BG)

Telefono: 0039 (0)5832221

E-mail: rotork.italia@rotork.com



WIKA Product Pass Italiano

serial number

WIKA

25-bdv--016

Type 23X.50

Manometro a molla tubolare 232.50/233.50
Cassa in acciaio inox

Serial number:

PW00DE28LJ8

Item number:

57424821

Manufacturing date:

04/2025



ITEM	Tag	25-PG-016	: Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80016		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10004809	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		8975GNDR			
Manufacturer	Wika			**Model**		233.50.63			
Cert No.	D.o.C. by Manufacturer reference 11564220			**Equipment Ambient Temp.**		-20 °C to +60 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP65

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	OK	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	OK	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	OK	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PG-016	: Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004809		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	25-PG-016	: Air Set Pressure Gauge Filter - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004809	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline ATEX	Form CJX01		Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks					
67	All Terminals are Ex n certified (if required on certificate)	x	NA		
68	Hermetically sealed and enclosed break devices are undamaged	x	NA		
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA		
70	Test port, if fitted, is functional (type “nR” only)	x	NA		
71	Breathing operation is satisfactory (type “nR” only)	x	NA		
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA		
73	The ventilation airflow is not impeded	x	NA		
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA		
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA		
76	Variable voltage/frequency installation complies with documentation	x	NA		
Extra Ex p checks					
77	Pressurization gas is correct type	x	NA		
78	Actual pressure is within maximum and minimum settings for equipment	x	NA		
79	Timers set as per certification documentation	x	NA		
80	Alarms and trip functions operate correctly as per certification documentation	x	NA		
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA		
82	Automatic electrical protective devices operate within permitted limits	x	NA		
83	Automatic electrical protective devices are set correctly	x	NA		
84	Protective gas inlet temperature is below maximum specified	x	NA		
85	Ducts, pipes and enclosures are in good condition	x	NA		
86	Protective gas is substantially free from contaminants	x	NA		
87	Protective gas pressure and/or flow is adequate	x	NA		
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA		
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA		
90	Specific conditions of use (if applicable) are complied with		NA		
Extra Ex i (Intrinsically Safe – IS) checks					
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA		
92	Cables are installed in accordance with the documentation	x	NA		
93	Segregation is maintained between IS and non-IS Circuits	x	NA		
94	Cable screens are isolated at one end (field side)	x	NA		
95	Cable screens are earthed in accordance with the documentation	x	NA		
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA		
97	Equipment installed is the one specified in the documentation	x	NA		
98	Ambient temperature range of the apparatus is correct for the installation	x	NA		
99	Service temperature range of the apparatus is correct for the installation	x	NA		
100	Installation is clearly labelled	x	NA		
101	Printed circuit boards are clean and undamaged	x	NA		
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA		
103	Point-to-point connections are all correct	x	NA		
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA		
105	Earth connections maintain the integrity of the type of protection	x	NA		
106	Intrinsically safe circuit earthing is satisfactory	x	NA		
107	Insulation resistance is satisfactory	x	NA		
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA		

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

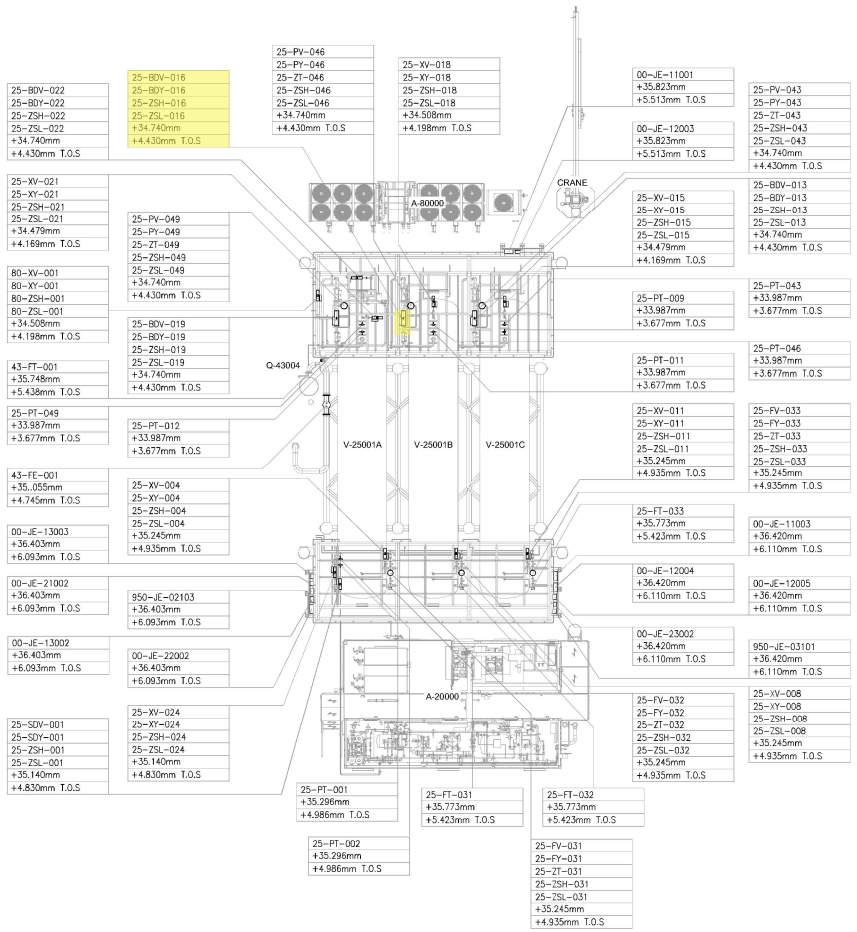
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-04	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:16:29.861Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-17T10:47:25.341Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

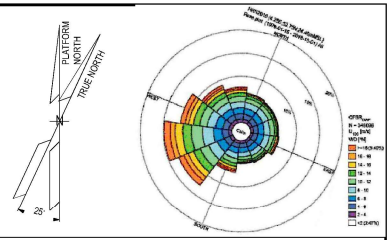
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40081

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

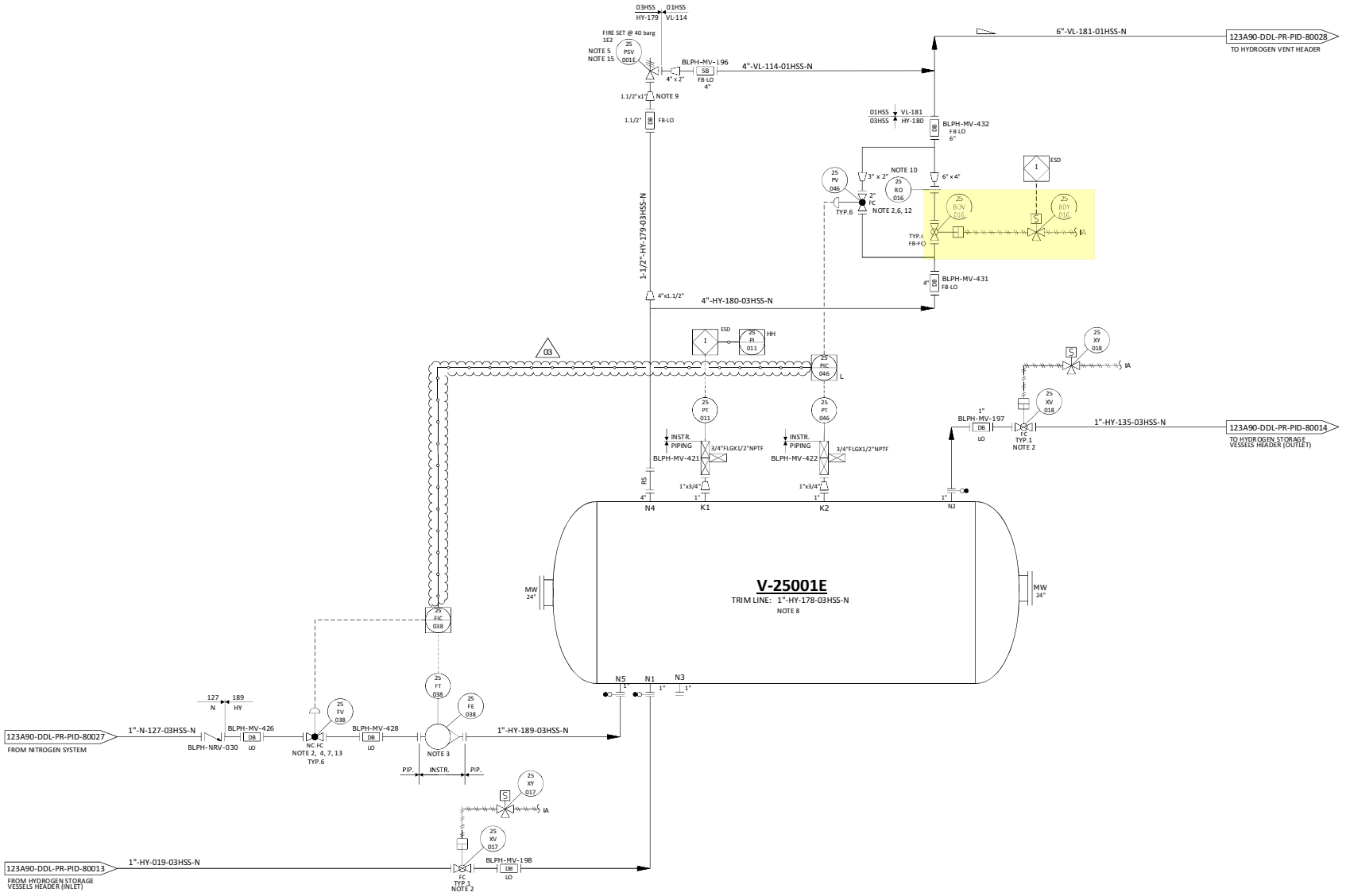
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

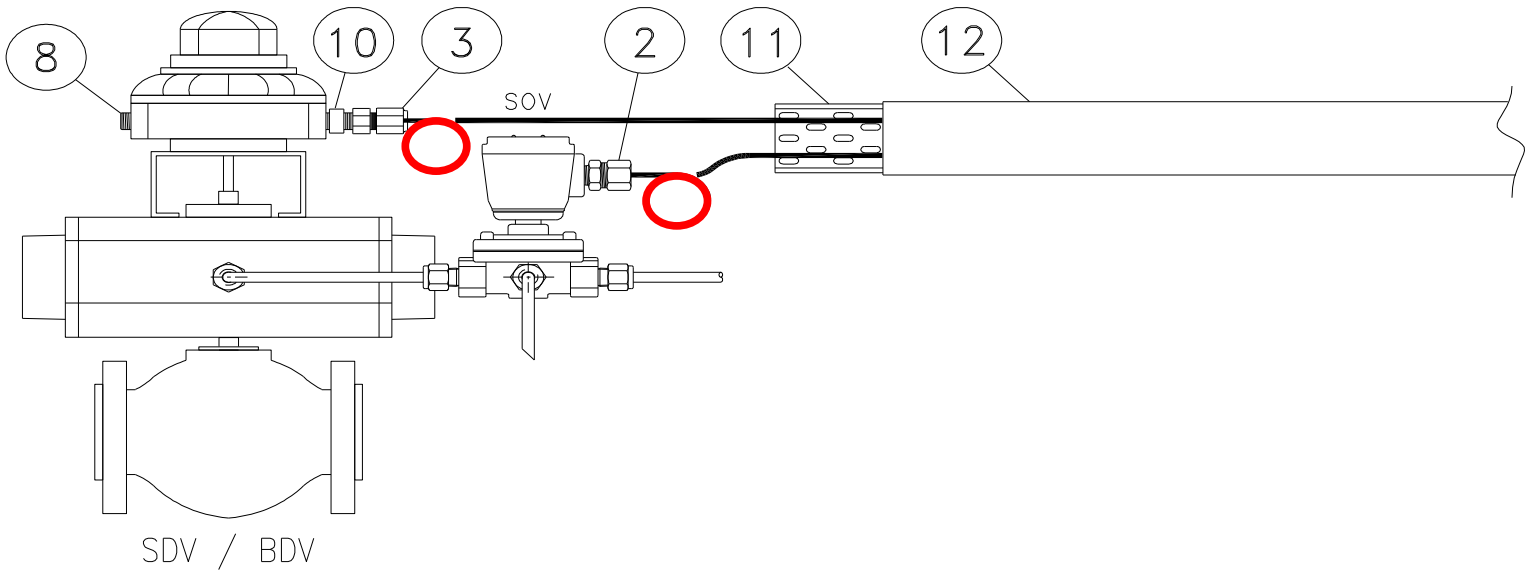
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 16 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR SDV/BDV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



SDV / BDV

INSTRUMENT TAG	
1	25-BDV-005
2	25-BDV-007
3	25-BDV-010
4	25-BDV-013
5	25-BDV-016
6	25-BDV-019
7	25-BDV-022
8	25-SDV-001
9	25-SDV-023
10	64-SDV-001
11	
12	
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NOTE:

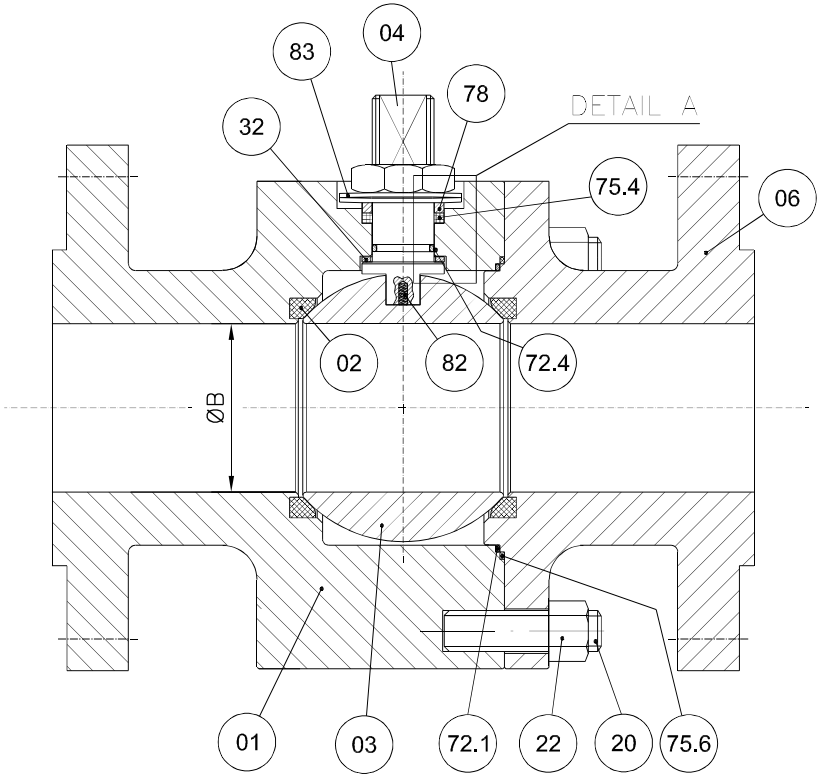
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

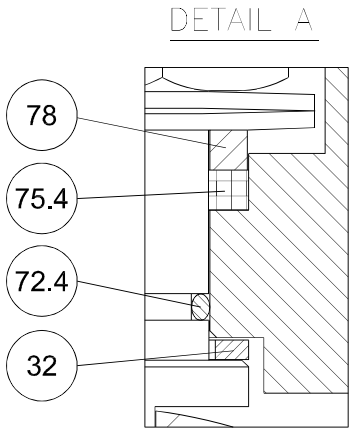
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

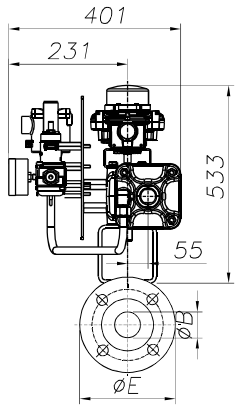
POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
10		Nickel Plated Brass Adaptor Ex-d/e IIC (or IIB + H2) T1	M20 Male x M25 Female	1
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
3		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1

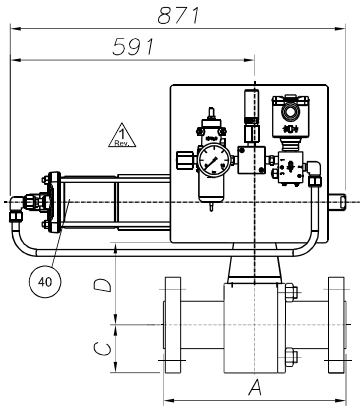
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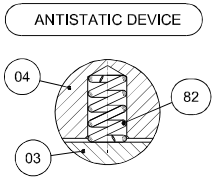




POS.	PART. NAME	MATERIAL
01	BODY	A182 F316/316L
02	SEAT	RPTFE
03	BALL	A182 F316/316L
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F316/316L
20	STUD	A193 B8M
22	NUT	A194 Gr.8M
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

1 Rev.

POS:	ITEM.:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
02	20	BA03C01RFH	25-BDV-005	1	4"	300	RF	305	102	127	209	254	74	95	169
03	30	BA03C01RFH	25-BDV-007	1	4"	300	RF	305	102	127	209	254	74	95	169
04	40	BA03C01RFH	25-BDV-010	1	4"	300	RF	305	102	127	209	254	74	95	169
05	50	BA03C01RFH	25-BDV-013	1	4"	300	RF	305	102	127	209	254	74	95	169
06	60	BA03C01RFH	25-BDV-016	1	4"	300	RF	305	102	127	209	254	74	95	169
07	70	BA03C01RFH	25-BDV-019	1	4"	300	RF	305	102	127	209	254	74	95	169

CUSTOMER :	ROSETTI MARINO S.p.A.						
P.O. N. :	1724000204 123A90A/REV.1						
JOB N. :	240062						
Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

2 Rev.

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-02-03-04-05-06-07

Rev.: 2

GENERAL	1	Tag Number	Location			25-BDV-016		25
	2	Service				HYDROGEN STORAGE TANK V-25001E DEPRESS.		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-180-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED) (35)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close :	(12)	Open : (12)
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form			4"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		(*)
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			A479 Tp 316		(*)
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-BDY-016 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-016 (9, 17) - Soldo SS		25-ZSH-016 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
1	IFR	25-BDV-022	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
2	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
3	N.A		floating ball valve	N.A	FLUITEK	1" 300#	2400620010001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
4	IFR		ACTUATOR	N.A	RFS	CP/S-035-080A/AA	AF771400101	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
5	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
6	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323301	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
7	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
8	IFR	25-BDV-005	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
9	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
10	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620020001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
11	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400201	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
12	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
13	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323309	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
14	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
15	IFR	25-BDV-007	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
16	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
17	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620030001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
18	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400301	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
19	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
20	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323302	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
21	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
22	IFR	25-BDV-010	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
23	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
24	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620040001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
25	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400401	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
26	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
27	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323292	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
28	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
29	IFR	25-BDV-013	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
30	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
31	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620050001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
32	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400501	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
33	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
34	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323305	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
35	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
36	IFR	25-BDV-016	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
37	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
38	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620060001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
39	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400601	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
40	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
41	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323295	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
42	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
43	IFR	25-BDV-019	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
44	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
45	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620070001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
46	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400701	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE

Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
00-JE-11001	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11002	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-11003	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-11004	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11005	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12001	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12002	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12003	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12004	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12005	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12006	PCS Digital Input JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13001	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13002	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-13003	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa		CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-21001	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87929	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-21002	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-22001	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87933	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-22002	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87934	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-23001	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-23002	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
25-BDV-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDV-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDV-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-BDY-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDY-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDY-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-FT-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FT-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-FT-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-FT-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FV-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FV-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FV-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FV-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FV-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FV-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FY-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407	II 2G	ATEX - SN 2400583	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FY-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407	II 2G	ATEX - SN 2400584	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FY-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407	II 2G	ATEX - SN 2400585	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FY-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407	II 2G	ATEX - SN 2400586	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FY-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407	II 2G	ATEX - SN 2400587	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FY-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407	II 2G	ATEX - SN 2400588	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-031	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

Bourdon tube pressure gauge, stainless steel
For the process industry, standard version
Models 232.50, 233.50, NS 63 [2 ½"], 100 [4"] and 160 [6"]

For further approvals, see page 6

Applications

- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Chemical and petrochemical industries, oil and gas industry, power engineering and also water and wastewater technology
- Machine building and general plant construction

Special features

- Excellent load cycle stability and shock resistance
- With case filling (model 233.50) for applications with high dynamic pressure loads and vibrations
- Completely from stainless steel
- Scale ranges from 0 … 0.6 to 0 … 1,600 bar or 0 ... 10 to 0 ... 20,000 psi
- QR code on dial links to instrument-specific information



Bourdon tube pressure gauge, model 232.50, NS 100 [4"]

Description

This high-quality Bourdon tube pressure gauge has been designed especially for the process industry.

The use of high-quality stainless steel materials and the robust design are geared to applications in the chemical and process engineering industries. Thus the instrument is suitable for liquid and gaseous media, also in aggressive environments.

Scale ranges of 0 … 0.6 to 0 … 1,600 bar [0 ... 10 to 0 ... 20,000 psi] ensure the measuring ranges required for a wide variety of applications.

WIKA manufactures and qualifies the pressure gauge in accordance with the standards EN 837-1 and ASME B40.100. As a safety function, this instrument has a blow-out device with blow-out plug on the back of the case. In the event of a failure, overpressure can escape there.

The model 233.50 with liquid-filled case is suitable for high dynamic pressure loads and vibrations.

The QR code on the dial allows instrument-specific information such as the serial number, the order number, certificates and other product data to be retrieved from the internet easily and in the long term.

Smart in sensing

Data sheets showing similar products:
Stainless steel, safety version; see data sheet PM 02.04
Bourdon tube pressure gauge with switch contacts; see data sheet PV 22.02
Monel version; see data sheet PM 02.33
Pressure gauge per EN 837-1 with mounted diaphragm seal; see data sheet DS 95.12

Specifications

Basic information	
Standard	■ EN 837-1 ■ ASME B40.100
	For information on the “Selection, installation, handling and operation of pressure gauges”, see technical information IN 00.05.
Further version	■ Oil- and grease-free for oxygen ■ Per NACE [1] MR0175 / ISO 15156, use in H_2S-containing environments in oil and gas production ■ With pre-volume deflagration flame arrester [2] for mounting to zone 0 (EPL Ga); model 910.21; see data sheet AC 91.02 ■ Monel version; models 262 and 263; see data sheet PM 02.33
Nominal size (NS)	■ Ø 63 mm [2 ½"] ■ Ø 100 mm [4"] ■ Ø 160 mm [6"]
Connection location	■ Lower mount (radial) ■ Lower back mount ■ Centre back mount (only for NS 63 [2 ½"])
Window	Laminated safety glass (NS 63 [2 ½"]: Polycarbonate)
Case	
Design	Safety level “S1” per EN 837-1 With blow-out device at case circumference, 12 o'clock (NS 63 [2 ½"]) and on the back of the case (NS 100 [4"] and 160 [6"]) Scale ranges ≤ 0 ... 16 bar [≤ 0 ... 300 psi] with compensating valve to vent and reseal case
Material	■ Stainless steel 1.4301 (304) ■ Stainless steel 1.4571 (316Ti)
Ring	Bayonet ring, stainless steel
Mounting	■ Without ■ Panel mounting flange, stainless steel ■ Panel mounting flange, polished stainless steel ■ Triangular profile ring with mounting bracket, polished stainless steel ■ Surface mounting flange, stainless steel
Case filling (model 233.50)	■ Without ■ Glycerine ■ Glycerine-water mixture for NS 100 [4"] and 160 [6"] with scale range ≤ 0 ... 2.5 bar [≤ 0 ... 40 psi] or for NS 63 [2 ½"] with scale range ≤ 0 ... 4 bar [≤ 0 ... 60 psi] ■ Silicone oil
Movement	■ Stainless steel ■ Stainless steel 1.4404 (316L) ■ everlast® version

1) General information about NACE standards; see data sheet IN 00.21
2) Only for instruments with Ex approval

Measuring element	
Type of measuring element	Bourdon tube, C-type or helical type
Material	Stainless steel 1.4404 (316L)
Leak tightness	■ Helium tested, leakage rate: $< 5 \cdot 10^{-3}$ mbar l/s ■ Helium tested, leakage rate: $< 1 \cdot 10^{-6}$ mbar l/s

Accuracy specifications		
Accuracy class		
NS 63 [2 ½"]	■ EN 837-1	Class 1.6
	■ ASME B40.100	±2 % | ±1 % | ±2 % of measuring span (grade A)
NS 100 [4"], 160 [6"]	■ EN 837-1	Class 1.0
	■ ASME B40.100	±1 % of measuring span (grade 1A)
Temperature error	On deviation from the reference conditions at the measuring system: ≤ ±0.4 % per 10 °C [≤ ±0.4 % per 18 °F] of full scale value	
Reference conditions		
Ambient temperature	+20 °C [+68 °F]	

Scale ranges

bar	
0 ... 0.6 [1]	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 160
0 ... 4	0 ... 250
0 ... 6	0 ... 400
0 ... 10	0 ... 600
0 ... 16	0 ... 1,000
0 ... 25	0 ... 1,600

kg/cm²	
0 ... 0.6 [1]	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 160
0 ... 4	0 ... 250
0 ... 6	0 ... 400
0 ... 10	0 ... 600
0 ... 16	0 ... 1,000
0 ... 25	0 ... 1,600

kPa	
0 ... 60 [1]	0 ... 4,000
0 ... 100	0 ... 6,000
0 ... 160	0 ... 10,000
0 ... 250	0 ... 16,000
0 ... 400	0 ... 25,000
0 ... 600	0 ... 40,000
0 ... 1,000	0 ... 60,000
0 ... 1,600	0 ... 100,000
0 ... 2,500	0 ... 160,000

MPa	
0 ... 0.06 [1]	0 ... 4
0 ... 0.1	0 ... 6
0 ... 0.16	0 ... 10
0 ... 0.25	0 ... 16
0 ... 0.4	0 ... 25
0 ... 0.6	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 160

psi	
0 ... 10 [1]	0 ... 1,000
0 ... 15	0 ... 1,500
0 ... 30	0 ... 2,000
0 ... 60	0 ... 3,000
0 ... 100	0 ... 4,000
0 ... 160	0 ... 5,000
0 ... 200	0 ... 6,000
0 ... 300	0 ... 7,500
0 ... 400	0 ... 10,000
0 ... 600	0 ... 15,000
0 ... 800	0 ... 20,000

1) Not available for NS 63 [2 ½"]

Vacuum and +/- scale ranges

bar	
-0.6 ... 0 [1]	-1 ... +5
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +3	

MPa	
-0.06 ... 0 [1]	-0.1 ... +0.5
-0.1 ... 0	-0.1 ... +0.9
-0.1 ... +0.06	-0.1 ... +1.5
-0.1 ... +0.15	-0.1 ... +2.4
-0.1 ... +0.3	

kPa	
-60 ... 0 [1]	-100 ... +500
-100 ... 0	-100 ... +900
-100 ... +60	-100 ... +1,500
-100 ... +150	-100 ... +2,400
-100 ... +300	

psi	
-30 inHg ... 0	-30 inHg ... +100
-30 inHg ... +15	-30 inHg ... +160
-30 inHg ... +30	-30 inHg ... +200
-30 inHg ... +60	-30 inHg ... +300

1) Not available for NS 63 [2 ½"]

Further details on: scale ranges	
Special scale ranges	Other scale ranges on request
Unit	■ bar ■ psi ■ kg/cm² ■ kPa ■ MPa
Increased overload safety	■ Without ■ 2 times ■ 3 times ■ 4 times ■ 5 times
	The possibility of selection depends on scale range and nominal size
Vacuum resistance	■ Without ■ Vacuum-resistant to -1 bar
Dial	
Scale colour	Black
Material	Aluminium
Special scale	■ Without ■ With temperature scale for refrigerant, e.g. for NH_3: R 717
	Other scales or customer-specific dials, e.g. with red mark, circular arcs or circular sectors, on request
Pointer	
Instrument pointer	Aluminium, black
Mark pointer/drag pointer	■ Without ■ Red mark pointer on dial, fixed ■ Red mark pointer on window, adjustable ■ Mark pointer on bayonet ring, adjustable ■ Red drag pointer on window, adjustable
Pointer stop pin	■ Without ■ At zero point (only for NS 63 [2 ½"]) ■ At 6 o'clock (only for NS 100 [4"], 160 [6"])

Process connection		
Standard	■ EN 837-1 ■ ISO 7 ■ ANSI/B1.20.1	
Size		
EN 837-1	■ G ⅛ B, male thread ■ G ¼ B, male thread ■ G ½ B, male thread ■ M12 x 1.5, male thread ■ M20 x 1.5, male thread	
ISO 7	■ R ¼, male thread ■ R ½, male thread	
ANSI/B1.20.1	■ ¼ NPT, male thread ■ ½ NPT, male thread	
Restrictor	■ Without ■ Ø 0.6 mm [0.024"], stainless steel ■ Ø 0.3 mm [0.012"], stainless steel	
Material (wetted)		
Process connection	Stainless steel 1.4404 (316L)	
Bourdon tube	Stainless steel 1.4404 (316L)	

→ Other process connections on request

Operating conditions		
Medium temperature		
Unfilled instruments	-40 ... +200 °C [-40 ... +392 °F]	
Instruments with glycerine filling	-20 ... +100 °C [-4 ... +212 °F]	
Instruments with silicone oil filling	-40 ... +100 °C [-40 ... +212 °F]	
Ambient temperature		
Unfilled instruments or with silicone oil filling	-40 ... +60 °C [-40 ... +140 °F]	
Instruments with glycerine filling	-20 ... +60 °C [-4 ... +140 °F]	
Pressure limitation		
NS 63 [2 ½"]	Steady	3/4 x full scale value
	Fluctuating	2/3 x full scale value
	Short time	Full scale value
NS 100 [4"], 160 [6"]	Steady	Full scale value
	Fluctuating	0.9 x full scale value
	Short time	1.3 x full scale value
Ingress protection per IEC/EN 60529	■ IP65 ■ IP66 (only selectable for scale ranges ≥ 0 ... 20 bar [0 ... 400 psi])	

Approvals

Logo	Description	Region
CE	**EU declaration of conformity** Pressure equipment directive PS > 200 bar, module A, pressure accessory	European Union
UKCA	**UKCA** Pressure equipment (safety) regulations	United Kingdom
-	**CRN** Safety (e.g. electr. safety, overpressure, ...) For full scale value ≤ 1,000 bar	Canada

Optional approvals

Logo	Description	Region
CE Ex	**EU declaration of conformity** ATEX directive Hazardous areas - Ex h Gas II 2G Ex h IIC T6 ... T1 Gb X Dust II 2D Ex h IIIC T85°C ... T450°C Db X	European Union
UKCA	**UKCA** Equipment and protective systems intended for use in potentially explosive atmospheres regulations	United Kingdom
EAC Ex	**EAC** Hazardous areas	Eurasian Economic Community
	Ex Ukraine Hazardous areas	Ukraine
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	**MChS** Permission for commissioning	Kazakhstan
-	**PAC Ukraine** Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
-	**PAC China** Metrology, measurement technology	China
	DNV Ships, shipbuilding (e.g. offshore)	International
-	**KBA** [1] Automotive	International
	Hydrogen-powered motor vehicles - (EC) no. 79/2009 and (EU) no. 406/2010	
	Components for motor vehicles using natural gas (CNG/LNG) – UN no. R 110	

1) Not available for all versions

Manufacturer's declaration

Logo	Description
-	Pressure equipment directive (PED) for maximum allowable pressure PS ≤ 200 bar
-	Suitability of wetted materials for drinking water in accordance with the European 4MS initiative
-	Suitability of wetted materials for hydrogen

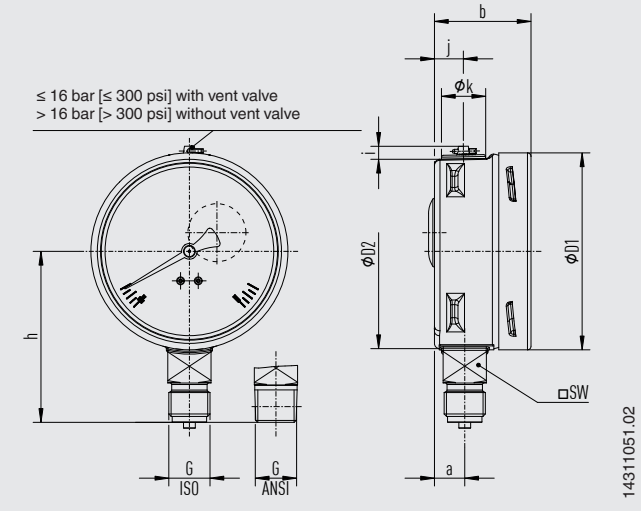
Certificates (option)

Certificates	
Certificates	■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts, indication accuracy) ■ PCA calibration certificate, traceable and accredited in accordance with ISO/IEC 17025 ■ Calibration certificate by a national accreditation body, traceable and accredited in accordance with ISO/IEC 17025 on request
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

Dimensions in mm [in]

Lower mount (radial)



NS	Weight	
	Model 232.50	Model 233.50
63 [2 ½"]	approx. 0.16 kg [0.35 lbs]	approx. 0.20 kg [0.44 lbs]
100 [4"]	approx. 0.6 kg [1.32 lbs]	approx. 0.9 kg [1.98 lbs]
160 [6"]	approx. 1.1 kg [2.43 lbs]	approx. 2.0 kg [4.41 lbs]

Process connection with thread per EN 837-1

NS	G	Dimensions in mm [in]								
		h ±1	a	b	D1	D2	i	j	k	SW
63 [2 ½"]	G ¼ B	54 [2.13]	9.5 [0.37]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	G ⅛ B	51 [2.01]	9.5 [0.37]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	M12 x 1.5	54 [2.13]	9.5 [0.37]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
100 [4"]	G ¼ B	80 [3.15]	15.5 [0.61]	49.5 [1.95]	101 [3.98]	99 [3.90]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	G ½ B	87 [3.43]	15.5 [0.61]	49.5 [1.95]	101 [3.98]	99 [3.90]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	M12 x 1.5	80 [3.15]	15.5 [0.61]	49.5 [1.95]	101 [3.98]	99 [3.90]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	M20 x 1.5	87 [3.43]	15.5 [0.61]	49.5 [1.95]	101 [3.98]	99 [3.90]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
160 [6"]	G ¼ B	111 [4.37]	15.5 [0.61]	51.5 [2.03] 1)	161 [6.34]	159 [6.26]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	G ½ B	118 [4.65]	15.5 [0.61]	51.5 [2.03] 1)	161 [6.34]	159 [6.26]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	M12 x 1.5	111 [4.37]	15.5 [0.61]	51.5 [2.03] 1)	161 [6.34]	159 [6.26]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	M20 x 1.5	118 [4.65]	15.5 [0.61]	51.5 [2.03] 1)	161 [6.34]	159 [6.26]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]

Process connection with thread per ISO 7

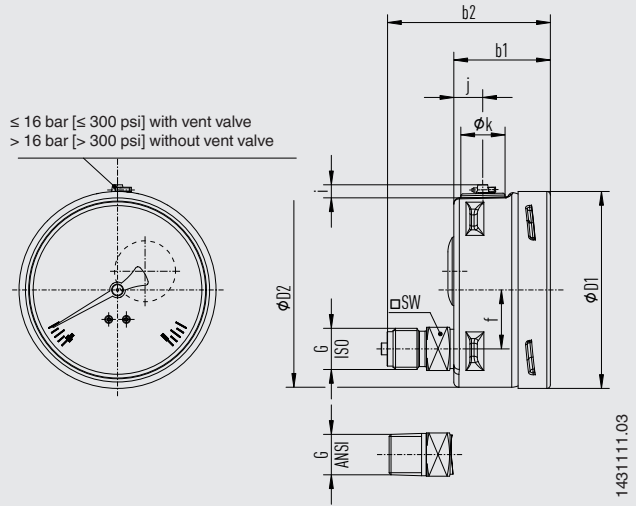
NS	G	Dimensions in mm [in]								
		h ±1	a	b	D1	D2	i	j	k	SW
63 [2 ½"]	R ¼	54 [2.13]	9.5 [0.37]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
100 [4"]	R ¼	80 [3.15]	15.5 [0.61]	49.5 [1.95]	101 [3.98]	99 [3.90]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	R ½	86 [3.39]	15.5 [0.61]	49.5 [1.95]	101 [3.98]	99 [3.90]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
160 [6"]	R ¼	111 [4.37]	15.5 [0.61]	51.5 [2.03] 1)	161 [6.34]	159 [6.26]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	R ½	117 [4.60]	15.5 [0.61]	51.5 [2.03] 1)	161 [6.34]	159 [6.26]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]

Process connection with thread per ANSI/B1.20.1

NS	G	Dimensions in mm [in]								
		h ±1	a	b	D1	D2	i	j	k	SW
63 [2 ½"]	¼ NPT	54 [2.13]	9.5 [0.37]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	⅛ NPT	51 [2.01]	9.5 [0.37]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
100 [4"]	¼ NPT	80 [3.15]	15.5 [0.61]	49.5 [1.95]	101 [3.98]	99 [3.90]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	½ NPT	86 [3.39]	15.5 [0.61]	49.5 [1.95]	101 [3.98]	99 [3.90]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
160 [6"]	¼ NPT	111 [4.37]	15.5 [0.61]	51.5 [2.03] 1)	161 [6.34]	159 [6.26]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	½ NPT	117 [4.60]	15.5 [0.61]	51.5 [2.03] 1)	161 [6.34]	159 [6.26]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]

1) Plus 16 mm [0.630 in] with scale range 0 ... 1,600 bar [0 ... 20,000 psi]

Lower back mount



NS	Weight	
	Model 232.50	Model 233.50
63 [2 ½"]	approx. 0.16 kg [0.35 lbs]	approx. 0.20 kg [0.44 lbs]
100 [4"]	approx. 0.6 kg [1.32 lbs]	approx. 0.9 kg [1.98 lbs]
160 [6"]	approx. 1.1 kg [2.43 lbs]	approx. 2.0 kg [4.41 lbs]

Process connection with thread per EN 837-1

NS	G	Dimensions in mm [in]								
		b1	b2 ±1	D1	D2	e	i	j	k	SW
63 [2 ½"]	G ¼ B	33 [1.30]	57 [2.24]	63 [2.48]	62 [2.44]	18.5 [0.73]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	G ⅛ B	33 [1.30]	54 [2.13]	63 [2.48]	62 [2.44]	18.5 [0.73]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	M12 x 1.5	33 [1.30]	57 [2.24]	63 [2.48]	62 [2.44]	18.5 [0.73]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
100 [4"]	G ¼ B	49.5 [1.95]	76 [2.99]	101 [3.98]	99 [3.90]	30 [1.181]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	G ½ B	49.5 [1.95]	83 [3.27]	101 [3.98]	99 [3.90]	30 [1.181]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	M12 x 1.5	49.5 [1.95]	76 [2.99]	101 [3.98]	99 [3.90]	30 [1.181]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	M20 x 1.5	49.5 [1.95]	83 [3.27]	101 [3.98]	99 [3.90]	30 [1.181]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
160 [6"]	G ¼ B	51.5 [2.03] 1)	78 [3.07] 1)	161 [6.34]	159 [6.26]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	G ½ B	51.5 [2.03] 1)	85 [3.24] 1)	161 [6.34]	159 [6.26]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	M12 x 1.5	51.5 [2.03] 1)	78 [3.07] 1)	161 [6.34]	159 [6.26]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	M20 x 1.5	51.5 [2.03] 1)	85 [3.24] 1)	161 [6.34]	159 [6.26]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]

Process connection with thread per ISO 7

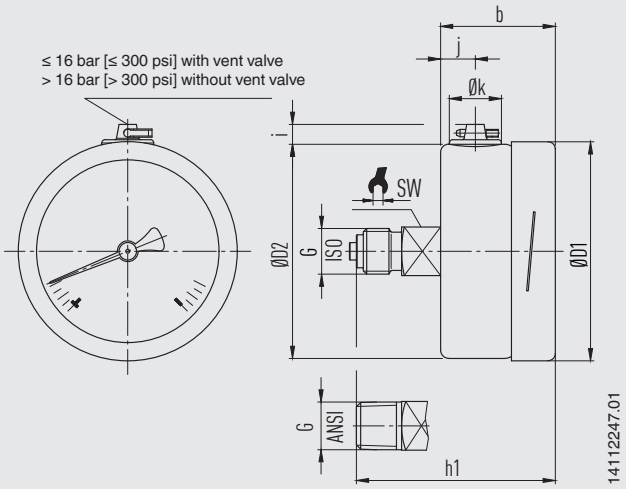
NS	G	Dimensions in mm [in]								
		b1	b2 ±1	D1	D2	e	i	j	k	SW
63 [2 ½"]	R ¼	33 [1.30]	57 [2.24]	63 [2.48]	62 [2.44]	18.5 [0.73]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
100 [4"]	R ¼	49.5 [1.95]	76 [2.99]	101 [3.98]	99 [3.90]	30 [1.181]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	R ½	49.5 [1.95]	82 [3.23]	101 [3.98]	99 [3.90]	30 [1.181]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
160 [6"]	R ¼	51.5 [2.03] 1)	78 [3.07] 1)	161 [6.34]	159 [6.26]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	R ½	51.5 [2.03] 1)	84 [3.31] 1)	161 [6.34]	159 [6.26]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]

Process connection with thread per ANSI/B1.20.1

NS	G	Dimensions in mm [in]								
		b1	b2 ±1	D1	D2	e	i	j	k	SW
63 [2 ½"]	¼ NPT	33 [1.30]	57 [2.24]	63 [2.48]	62 [2.44]	50 [1.97]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	⅛ NPT	33 [1.30]	54 [2.13]	63 [2.48]	62 [2.44]	50 [1.97]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
100 [4"]	¼ NPT	49.5 [1.95]	76 [2.99]	101 [3.98]	99 [3.90]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	½ NPT	49.5 [1.95]	82 [3.23]	101 [3.98]	99 [3.90]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
160 [6"]	¼ NPT	51.5 [2.03] 1)	78 [3.07] 1)	161 [6.34]	159 [6.26]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]
	½ NPT	51.5 [2.03] 1)	84 [3.31] 1)	161 [6.34]	159 [6.26]	50 [1.97]	6.5 [0.26]	14.5 [0.57]	22.5 [0.89]	22 [0.87]

1) Plus 16 mm [0.630 in] with scale ranges ≥ 0 ... 100 bar [≥ 0 ... 1,500 psi]

NS 63 [2 ½"], centre back mount



NS	Weight	
	Model 232.50	Model 233.50
63 [2 ½"]	approx. 0.16 kg [0.35 lbs]	approx. 0.20 kg [0.44 lbs]

Process connection with thread per EN 837-1

NS	G	Dimensions in mm [in]							
		h ±1	b	D1	D2	i	j	k	SW
63 [2 ½"]	G ¼ B	57 [2.24]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	G ⅛ B	54 [2.13]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	M12 x 1.5	57 [2.24]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]

Process connection with thread per ISO 7

NS	G	Dimensions in mm [in]							
		h ±1	b	D1	D2	i	j	k	SW
63 [2 ½"]	R ¼	57 [2.24]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]

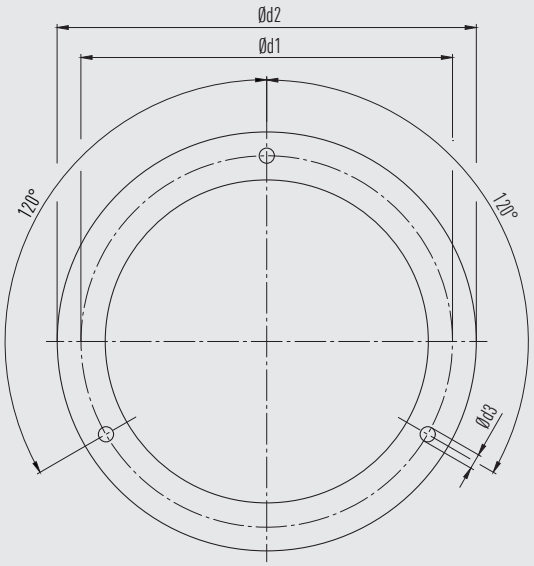
Process connection with thread per ANSI/B1.20.1

NS	G	Dimensions in mm [in]							
		h ±1	b	D1	D2	i	j	k	SW
63 [2 ½"]	¼ NPT	57 [2.24]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]
	⅛ NPT	54 [2.13]	33 [1.30]	63 [2.48]	62 [2.44]	6 [0.24]	10 [0.39]	15 [0.59]	14 [0.55]

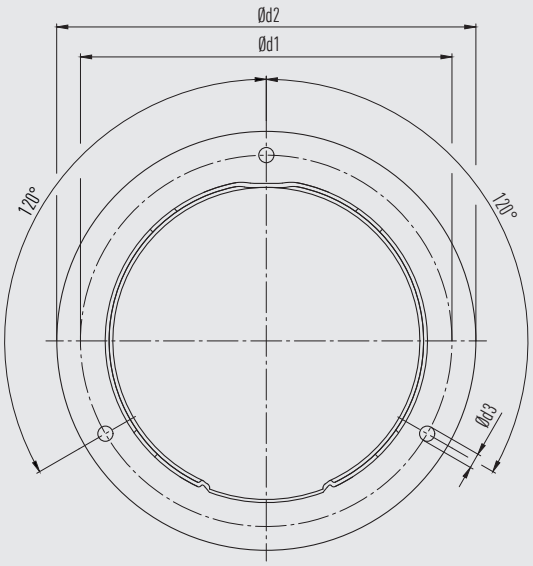
Accessories

Dimensions in mm [in]

Panel mounting flange

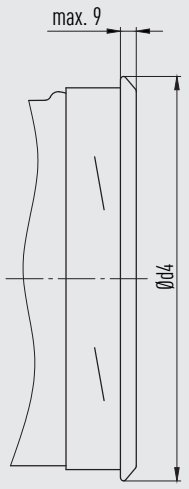


Surface mounting flange



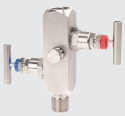
NS	Dimensions in mm [in]			
	Recommended panel cutout	d1	d2	d3
63 [2 ½"]	Ø 67 ±0.3 / Ø 2.6 [Ø 2.64 ±0.01 / Ø 0.10]	75 [2.95]	85 [3.35]	3.6 [0.14]
100 [4"]	Ø 104 ±0.5 / Ø 4.1 [Ø 4.04 ±0.02 / Ø 0.16]	117 [4.60]	132 [5.20]	4.8 [0.19]
160 [6"]	Ø 164 ±0.5 / Ø 6.5 [Ø 6.46 ±0.02 / Ø 0.26]	178 [7.01]	196 [7.72]	5.8 [0.23]

Triangular profile ring



NS	Dimensions in mm [in]	
	Recommended panel cutout	d4
63 [2 ½"]	Ø 64.5 ±0.5 / Ø 2.5 [Ø 2.54 ±0.02 / Ø 0.01]	≤ 69 [2.72]
100 [4"]	Ø 102 ±1.0 / Ø 4.0 [Ø 4.02 ±0.04 / Ø 0.16]	≤ 108 [4.25]
160 [6"]	Ø 162.6 ±1.0 / Ø 6.4 [Ø 6.40 ±0.04 / Ø 0.25]	≤ 168 [6.61]

Accessories and spare parts

Model		Description
	**910.17**	Seals → See data sheet AC 09.08
	**910.15**	Syphons → See data sheet AC 09.06
	**910.13**	Overpressure protector → See data sheet AC 09.04
	**IV10, IV11**	Needle valve and multiport valve → See data sheet AC 09.22
	**IV20, IV21**	Block-and-bleed valve → See data sheet AC 09.19
	**IVM**	Monoflange, process and instrument version → See data sheet AC 09.17
	**BV**	Ball valve, process and instrument version → See data sheet AC 09.28
	**IBF2, IBF3**	Monoblock with flange connection → See data sheet AC 09.25

Ordering information

Model / Nominal size / Scale range / Process connection / Connection location / Options

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The specifications given in this document represent the state of engineering at the time of publishing.
We reserve the right to make modifications to the specifications and materials.
In case of a different interpretation of the translated and the English data sheet, the English wording shall prevail.

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EU-Konformitätserklärung
EU Declaration of Conformity

Dokument Nr. / ***Document No.*** **11564220** — **Revision** / ***Issue*** **07**

Wir erklären in alleiniger Verantwortung, dass die mit CE gekennzeichneten Produkte
We declare under our sole responsibility that the CE marked products

Typenbezeichnung / ***Type Designation***

23a.50.063 + option ATEX | **23a.50.1*0 + option ATEX**
26a.50.063 + option ATEX | **26a.50.1*0 + option ATEX**
23a.30.063 + option ATEX | **23a.30.1*0 + option ATEX**
26a.30.063 + option ATEX | **26a.30.1*0 + option ATEX**
23a.53.063 + option ATEX | **23a.53.100 + option ATEX**
23a.54.063 + option ATEX | **23a.54.100 + option ATEX**
23a.36.1*0 + option ATEX
PG23LT.063 + option ATEX | **PG23LT.1*0 + option ATEX**
PG23CP.063 + option ATEX | **PG23CP.100 + option ATEX**
PG28.1*0 + option ATEX
PG23HP-S.1*0 + option ATEX | **PG23HP-P.1*0 + option ATEX**

*** Nominal size**
0 = 100mm
6 = 160mm

a Case filling
2 = Without case filling
3 = With case filling

Beschreibung / ***Description***: **Rohrfederdruckmessgerät** / ***Bourdon Tube Pressure Gauge***

gemäß gültigem Datenblatt / *according to the valid data sheet*: PM 02.02, PM 02.04, PM 02.12, PM 02.15, PM 02.22, PM 02.24, PM 02.32, PM 02.28, PM 02.29

mit den nachfolgenden relevanten Harmonisierungsvorschriften der Union übereinstimmen
are in conformity with the following relevant Union harmonisation legislation

Angewandte harmonisierte Normen oder sonstige technische Spezifikationen:
Applied harmonised standards or other technical specifications:

2014/68/EU	Druckgeräterichtlinie (DGRL) (1) *Pressure Equipment Directive (PED)* (1)	
2014/34/EU	Explosionsschutz (ATEX) (2) *Explosion protection (ATEX)* (2)	
Ex	II 2G Ex h IIC T6 … T1 Gb X II 2D Ex h IIIC T85 °C … T450 °C Db X	EN ISO 80079-36 :2016 EN ISO 80079-37 :2016

(1) PS > 200 bar; Modul A, druckhaltendes Ausrüstungsteil
PS > 200 bar; Module A, pressure accessory

(2) Modul A „interne Fertigungskontrolle“. Die Dokumentation ist hinterlegt unter der Nummer 074/24 bei der Notifizierten Stelle der EU, IBExU Institut für Sicherheitstechnik GmbH (EU ID-Nr. 0637).
Module A “Internal Control of Production”. The Documentation is deposited under registration number 074/24 at Notified Body of EU, IBExU Institut für Sicherheitstechnik GmbH (EU ID 0637). .

Unterzeichnet für und im Namen von / *Signed for and on behalf of*

WIKA Alexander Wiegand SE & Co. KG

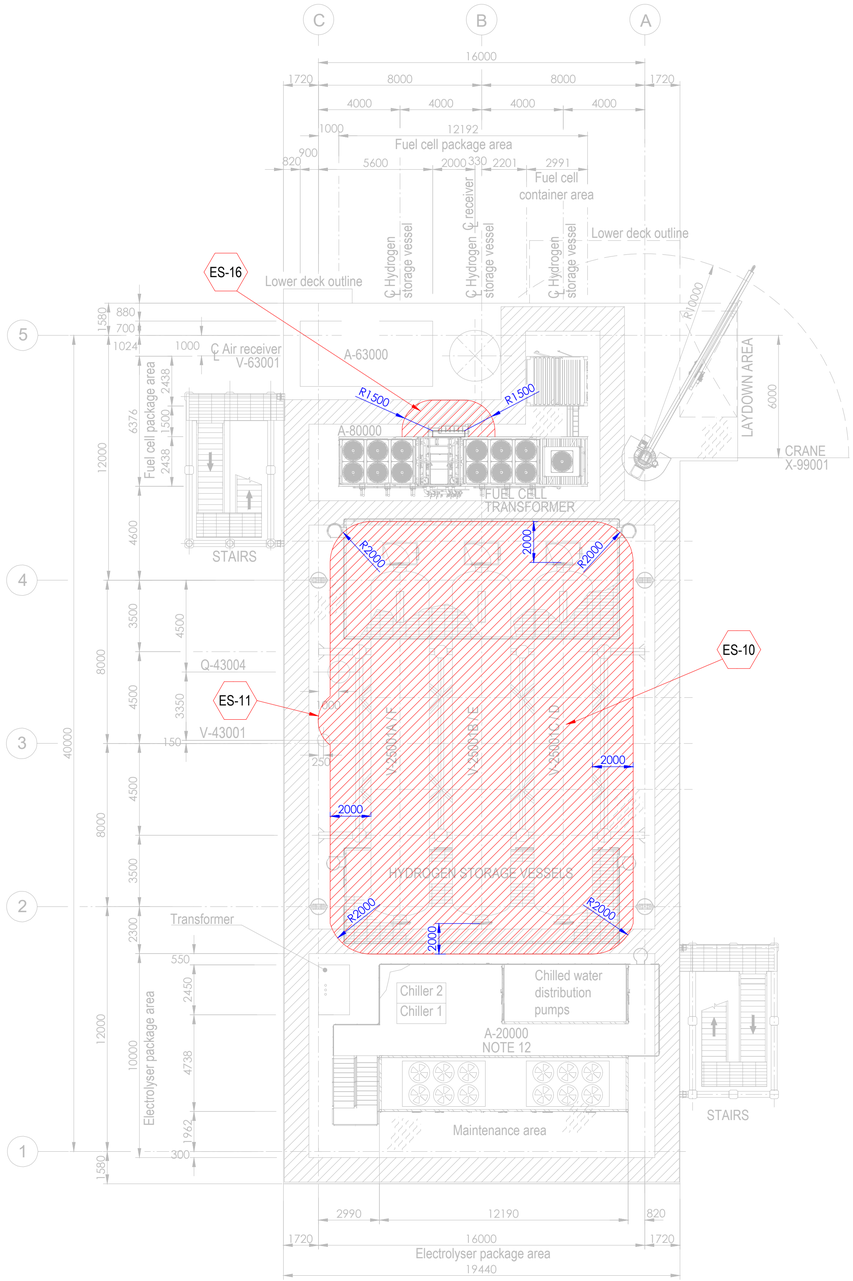
Klingenberg, 2024-04-24

Sascha Schnellbacher, Vice President
CoE Gauges, Sensors & Instruments

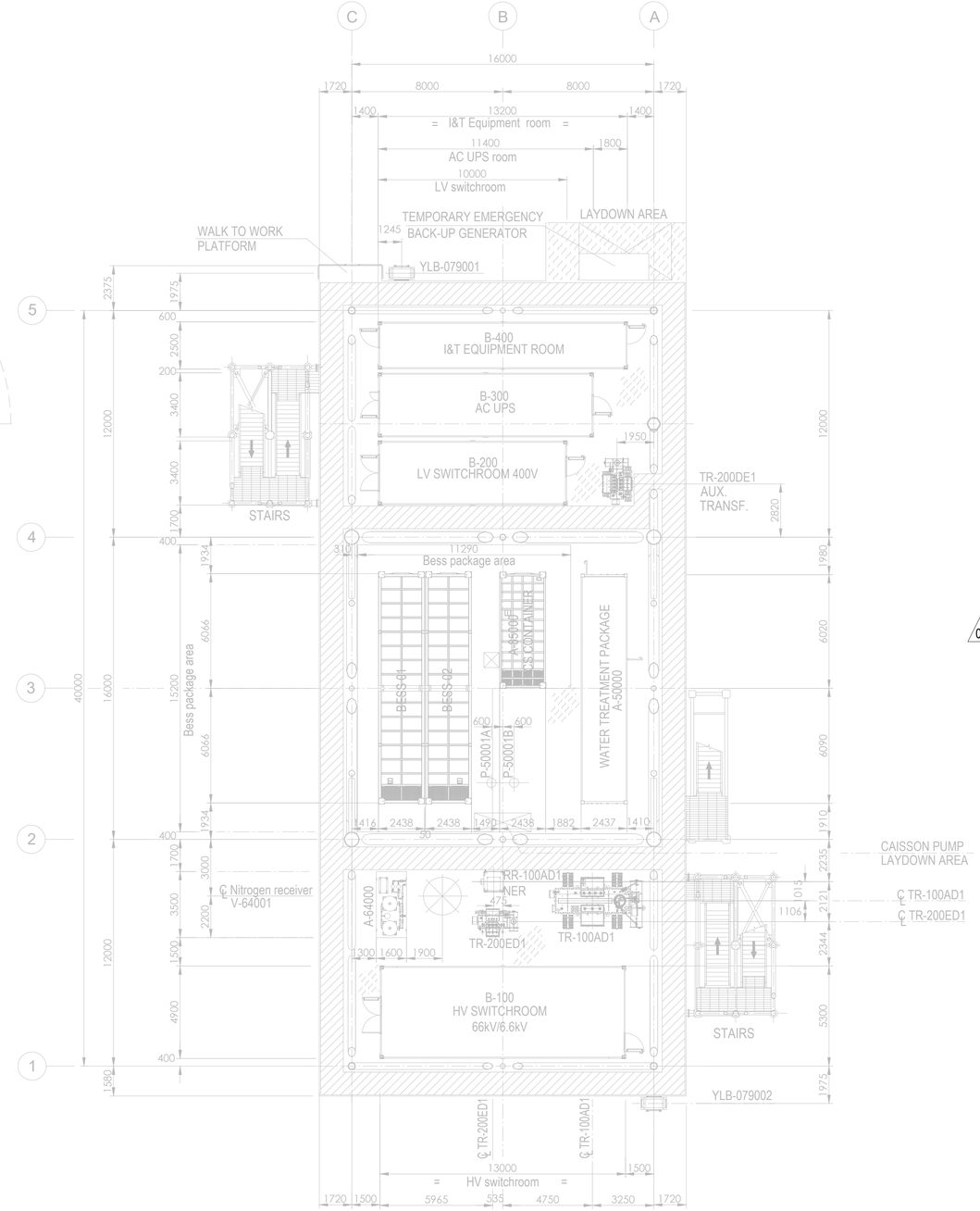
Mariusz Lubomski, Director of Quality
CoE Gauges, Sensors & Instruments

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



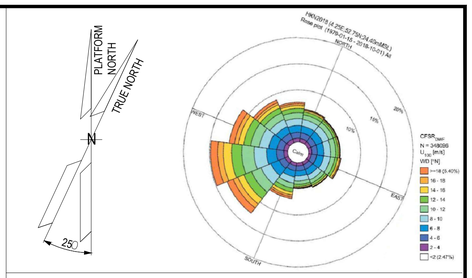
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

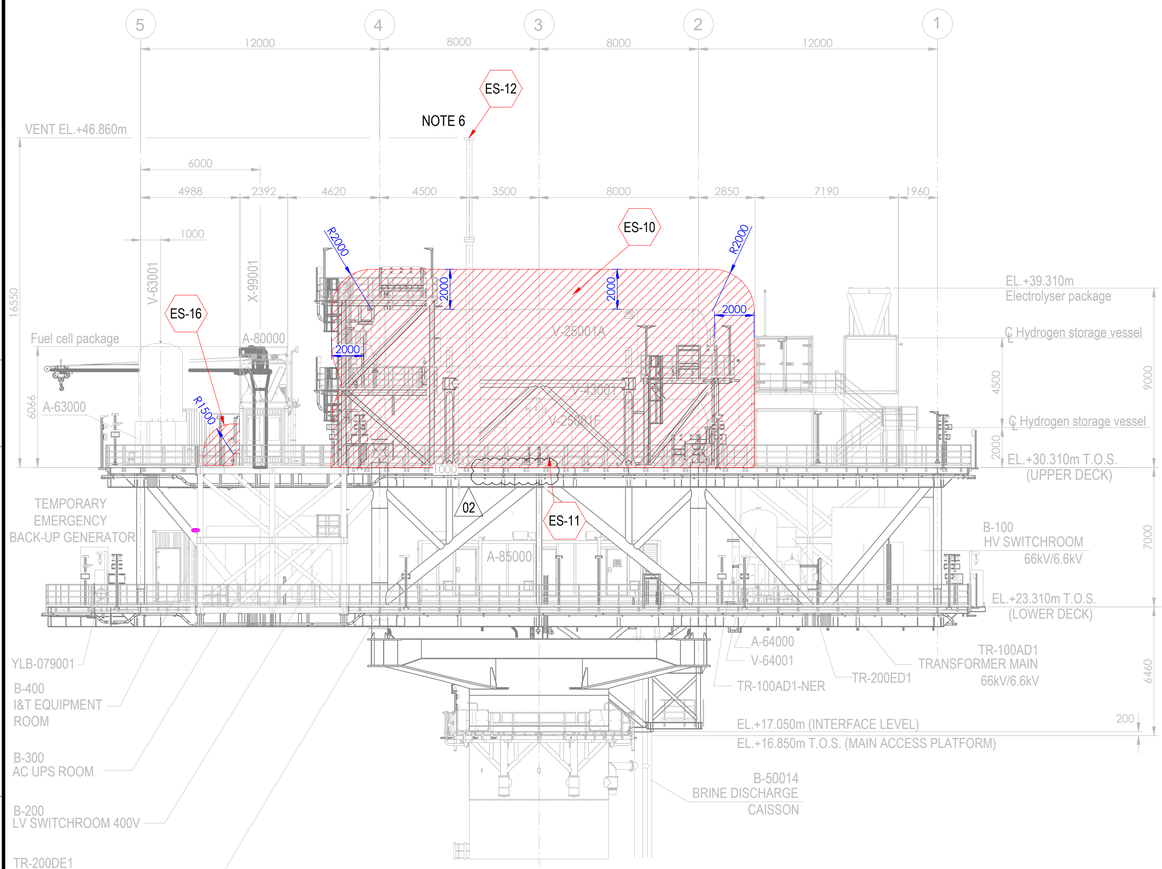
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

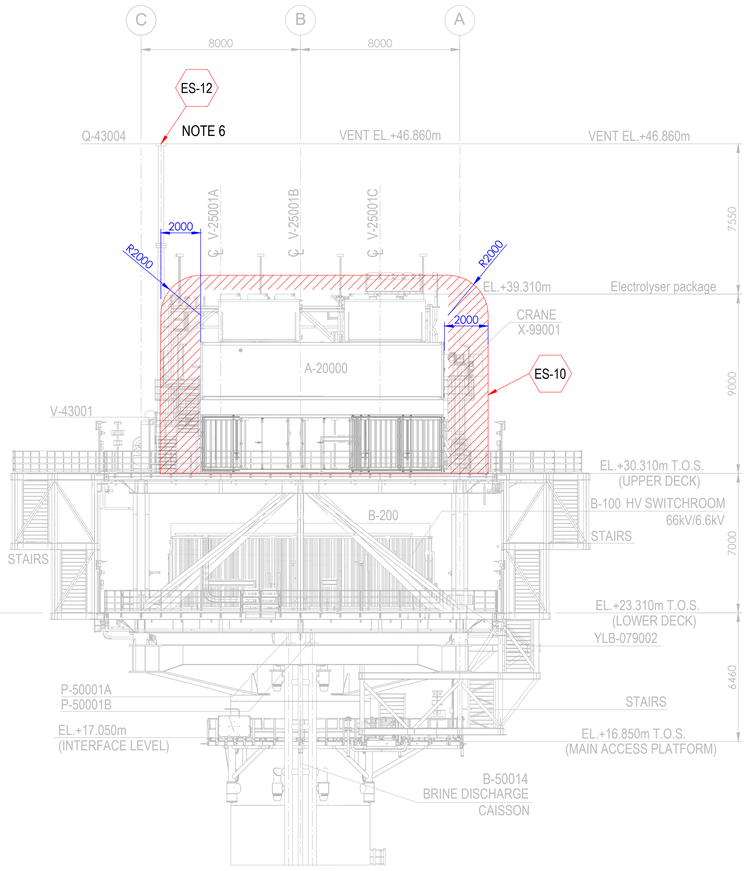
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

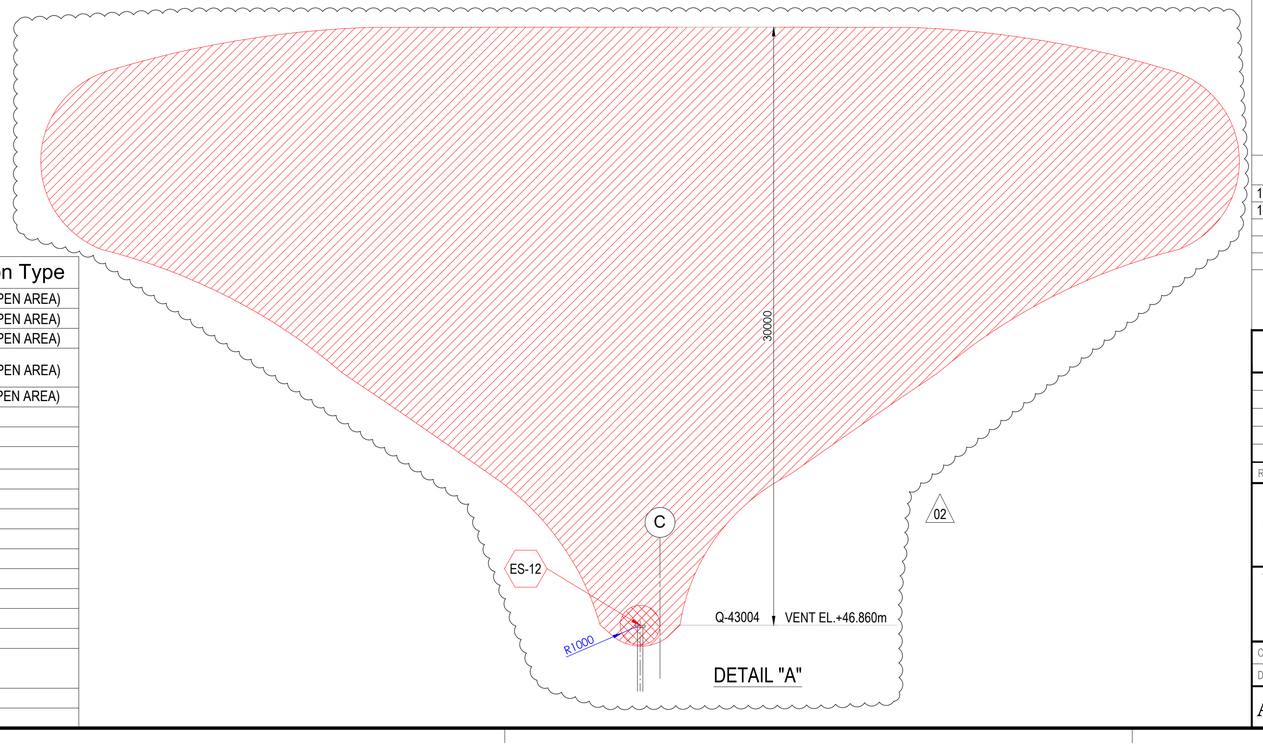


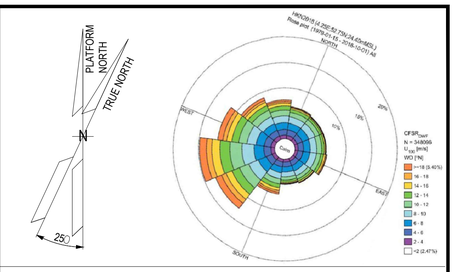
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

ITEM	Tag	25-PSV-016	: Safety Valve - Vessel V-25001E Hydrogen Vent System	Dwg	123A90-DDL-PR-PID-80016		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10004816	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01

Hazardous Area Equipment Detailed Inspection

Schedule Ref. #				**Area Code**					
Area Class Drawing	123A90-DDL-SAF-DL-30022			**Serial No.**		25308839			
Manufacturer	NUOVA GENERAL INSTRUMENTS			**Model**		D10/S			
Cert No.	Declaration of Conformity by Manufacturer			**Equipment Ambient Temp.**		-20 °C to +40 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex h	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	NA

Detailed Note:

1) Inspection shall only be performed by competent personnel

2) All fields are to be completed. Any non-applicable field shall state "NA". Comments are required for 'Failure' column ONLY.

3) An Inspection Sheet should be completed for EACH individual item of Equipment.

	General Equipment	Detailed	OK/NA/PL	Comments
1	Equipment is appropriate to the EPL / Zone requirements of the area	x	OK	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	NA	
6	Equipment circuit identification is available	x	NA	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex "e" – Ex "n" – Ex "t")	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	NA	
25	There is no obvious damage to the cables	x	NA	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	25-PSV-016	: Safety Valve - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-PR-PID-80016
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004816	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	NA	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	NA	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	NA	
60	Power conductors are not bunched together causing possible hot spots	x	NA	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ITEM	Tag	25-PSV-016	: Safety Valve - Vessel V-25001E Hydrogen Vent System		Dwg	123A90-DDL-PR-PID-80016	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10004816	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

Extra Ex n (nR, nL) checks				
67	All Terminals are Ex n certified (if required on certificate)	x	NA	
68	Hermetically sealed and enclosed break devices are undamaged	x	NA	
69	Restricted breathing properties satisfactory (conduct vacuum test)	x	NA	
70	Test port, if fitted, is functional (type “nR” only)	x	NA	
71	Breathing operation is satisfactory (type “nR” only)	x	NA	
72	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are	x	NA	
73	The ventilation airflow is not impeded	x	NA	
74	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
75	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
76	Variable voltage/frequency installation complies with documentation	x	NA	
Extra Ex p checks				
77	Pressurization gas is correct type	x	NA	
78	Actual pressure is within maximum and minimum settings for equipment	x	NA	
79	Timers set as per certification documentation	x	NA	
80	Alarms and trip functions operate correctly as per certification documentation	x	NA	
81	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
82	Automatic electrical protective devices operate within permitted limits	x	NA	
83	Automatic electrical protective devices are set correctly	x	NA	
84	Protective gas inlet temperature is below maximum specified	x	NA	
85	Ducts, pipes and enclosures are in good condition	x	NA	
86	Protective gas is substantially free from contaminants	x	NA	
87	Protective gas pressure and/or flow is adequate	x	NA	
88	Pressure and/or flow indicators, alarms and interlocks function correctly	x	NA	
89	Conditions of spark and particle barriers of ducts for exhausting the gas in hazardous area are satisfactory	x	NA	
90	Specific conditions of use (if applicable) are complied with		NA	
Extra Ex i (Intrinsically Safe – IS) checks				
91	Equipment has adequate circuit identification for ‘IS’ Installation	x	NA	
92	Cables are installed in accordance with the documentation	x	NA	
93	Segregation is maintained between IS and non-IS Circuits	x	NA	
94	Cable screens are isolated at one end (field side)	x	NA	
95	Cable screens are earthed in accordance with the documentation	x	NA	
96	Safety barrier units, relays and other energy limiting devices are of the approved type, installed in	x	NA	
97	Equipment installed is the one specified in the documentation	x	NA	
98	Ambient temperature range of the apparatus is correct for the installation	x	NA	
99	Service temperature range of the apparatus is correct for the installation	x	NA	
100	Installation is clearly labelled	x	NA	
101	Printed circuit boards are clean and undamaged	x	NA	
102	The maximum voltage Um of the associated apparatus is not exceeded	x	NA	
103	Point-to-point connections are all correct	x	NA	
104	Earth continuity is satisfactory (e.g. connections are tight, conductors are of sufficient cross-section)	x	NA	
105	Earth connections maintain the integrity of the type of protection	x	NA	
106	Intrinsically safe circuit earthing is satisfactory	x	NA	
107	Insulation resistance is satisfactory	x	NA	
108	Short-circuit protection of the power supply is in accordance with the documentation	x	NA	

	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

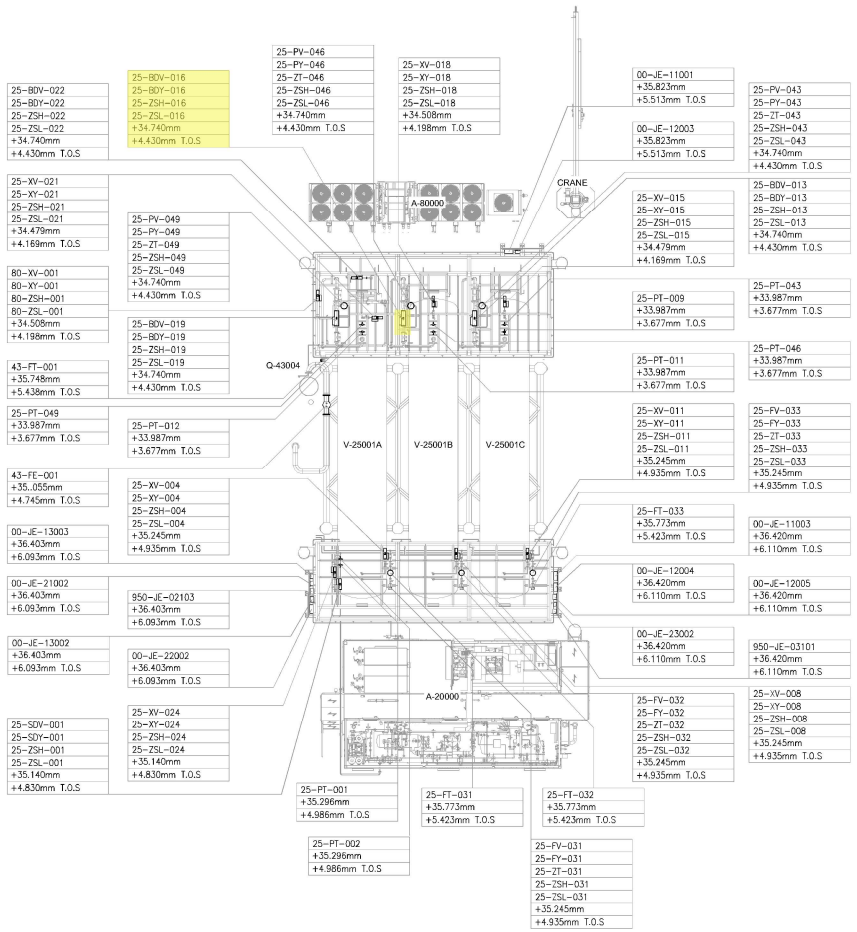
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

Please mark only one box as appropriate	
●	**Passed - Complete**
	Failed

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-04	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:16:43.907Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-17T11:03:46.769Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

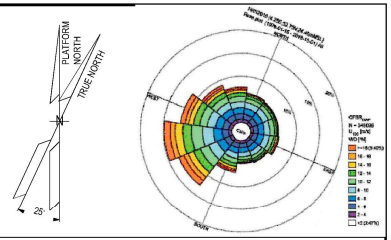
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40081

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

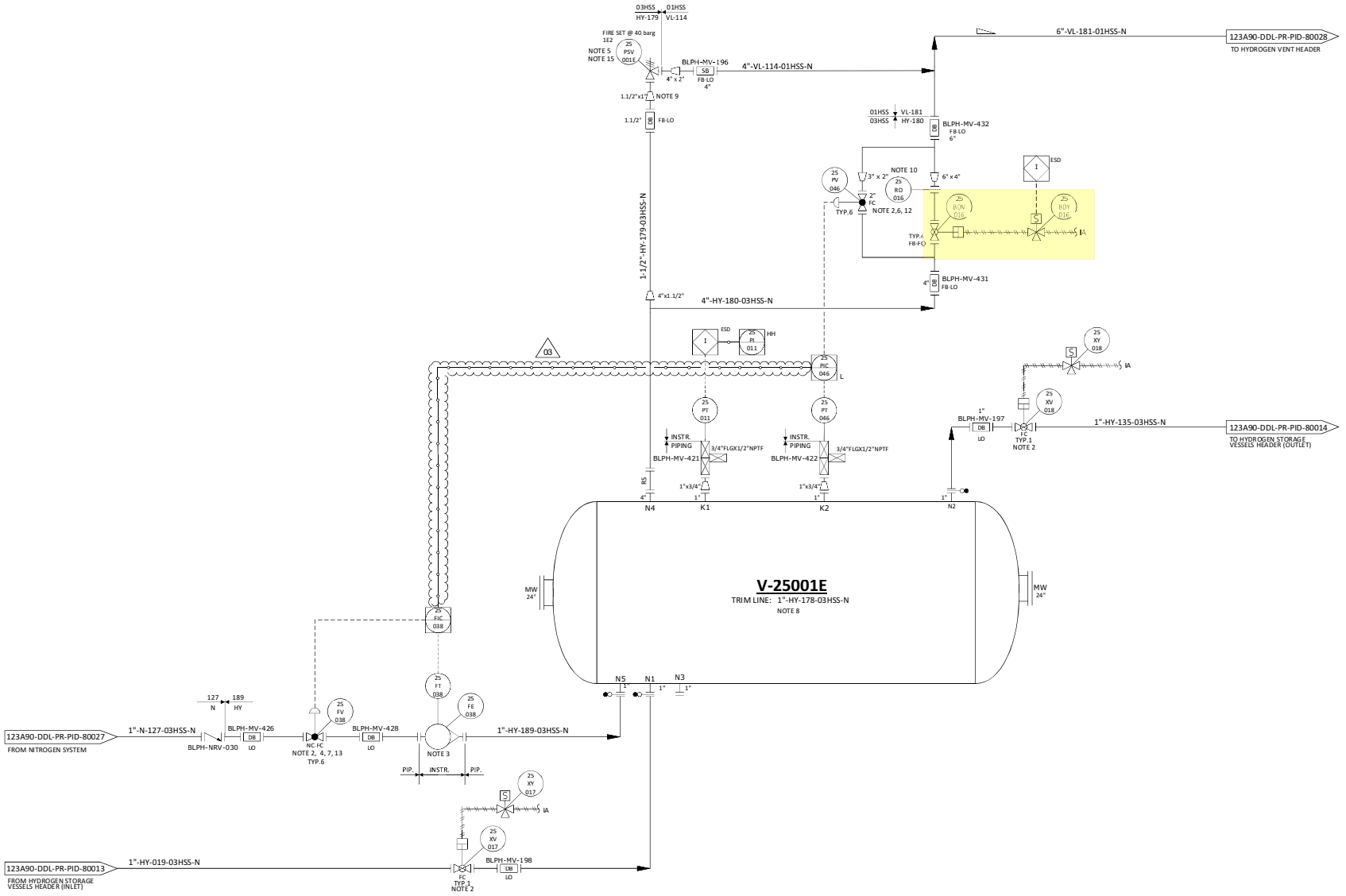
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

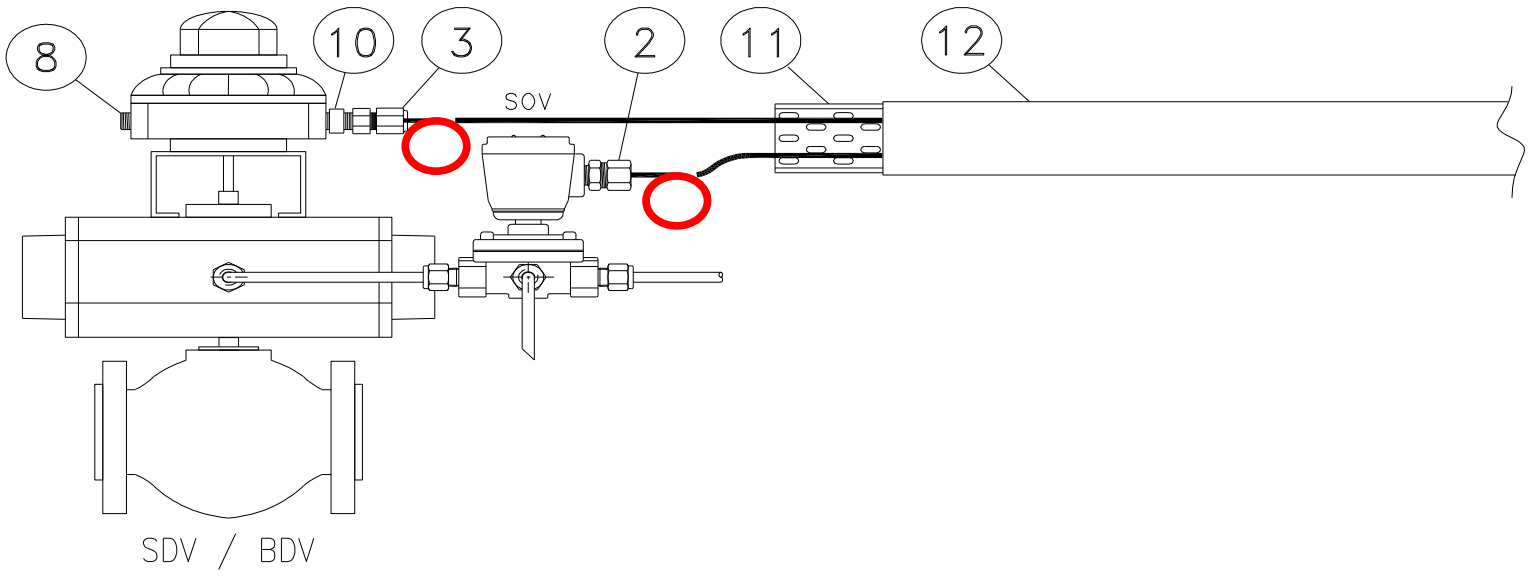
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 16 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR SDV/BDV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



SDV / BDV

INSTRUMENT TAG	
1	25-BDV-005
2	25-BDV-007
3	25-BDV-010
4	25-BDV-013
5	25-BDV-016
6	25-BDV-019
7	25-BDV-022
8	25-SDV-001
9	25-SDV-023
10	64-SDV-001
11	
12	
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NOTE:

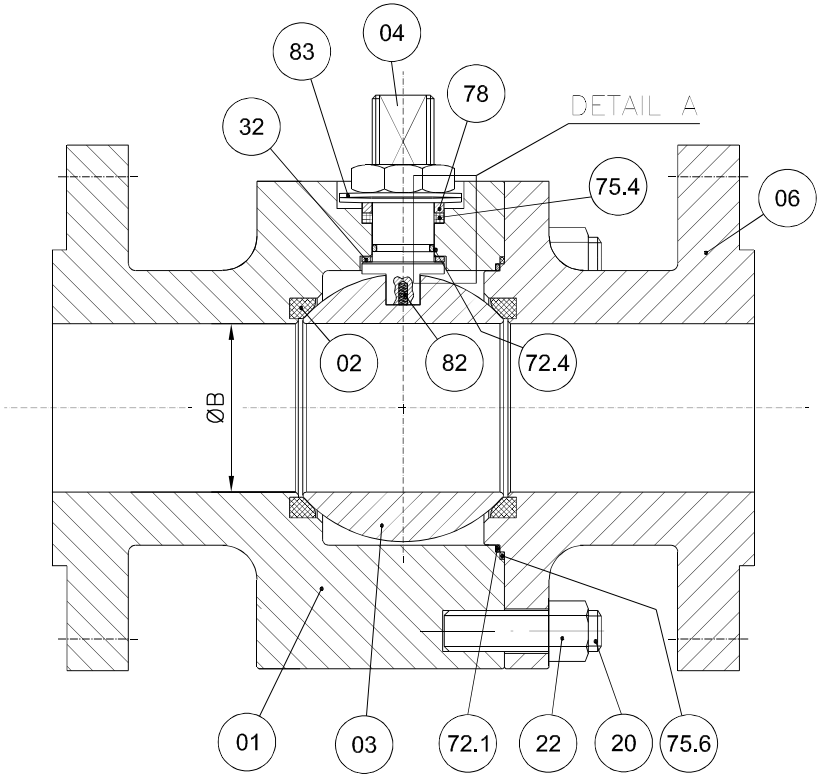
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

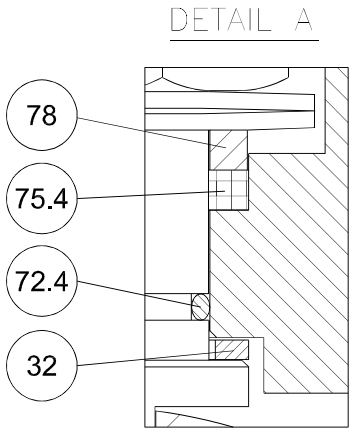
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

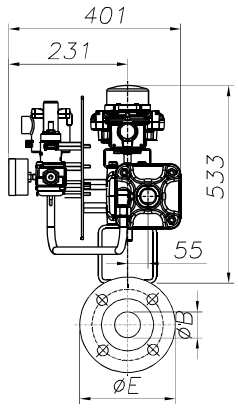
POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
10		Nickel Plated Brass Adaptor Ex-d/e IIC (or IIB + H2) T1	M20 Male x M25 Female	1
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
3		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1

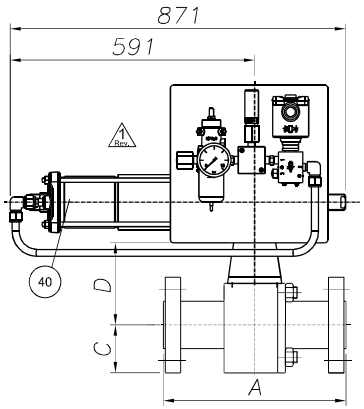
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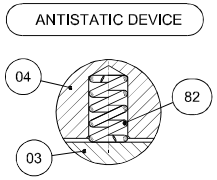




POS.	PART. NAME	MATERIAL
01	BODY	A182 F316/316L
02	SEAT	RPTFE
03	BALL	A182 F316/316L
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F316/316L
20	STUD	A193 B8M
22	NUT	A194 Gr.8M
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

1 Rev.

POS:	ITEM.:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
02	20	BA03C01RFH	25-BDV-005	1	4"	300	RF	305	102	127	209	254	74	95	169
03	30	BA03C01RFH	25-BDV-007	1	4"	300	RF	305	102	127	209	254	74	95	169
04	40	BA03C01RFH	25-BDV-010	1	4"	300	RF	305	102	127	209	254	74	95	169
05	50	BA03C01RFH	25-BDV-013	1	4"	300	RF	305	102	127	209	254	74	95	169
06	60	BA03C01RFH	25-BDV-016	1	4"	300	RF	305	102	127	209	254	74	95	169
07	70	BA03C01RFH	25-BDV-019	1	4"	300	RF	305	102	127	209	254	74	95	169

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-02-03-04-05-06-07

Rev.: 2

GENERAL	1	Tag Number	Location			25-BDV-016		25
	2	Service				HYDROGEN STORAGE TANK V-25001E DEPRESS.		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-180-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED) (35)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close :	(12)	Open : (12)
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form			4"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		(*)
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			A479 Tp 316		(*)
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-BDY-016 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-016 (9, 17) - Soldo SS		25-ZSH-016 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

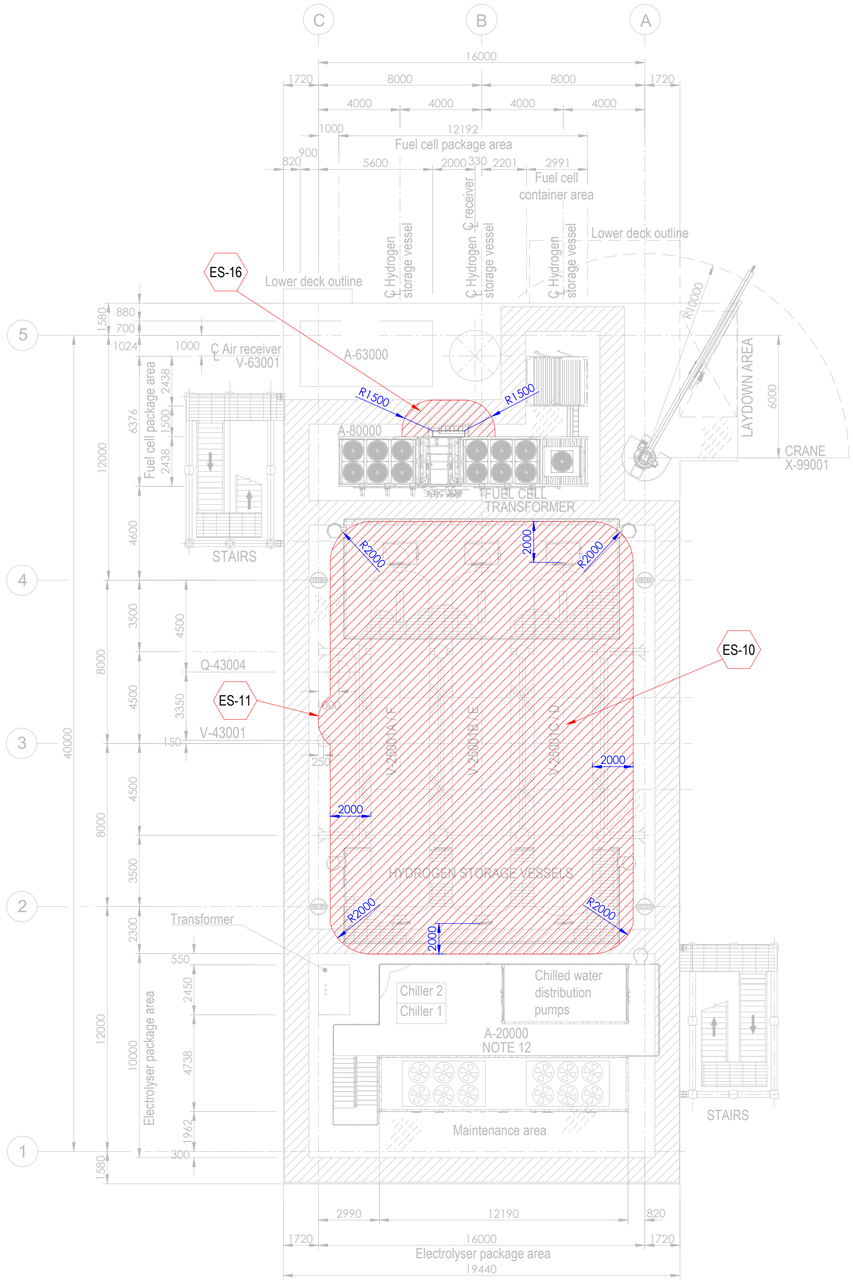
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No.	Revision	Tag Number	Description	Location	Manufacturer	Model Type Catalogue Number	Serial Number	ATEX Certification Marking	Reference Document	ATEX Certificate Number	Installation Zone	Notes / Comments	P.O.	Vendor	Skid / Package	Barrier Calculation Ref.	Non-Electrical Equipment	Special Conditions of safe use Applicable
1	IFR	25-BDV-022	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
2	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
3	N.A		floating ball valve	N.A	FLUITEK	1" 300#	2400620010001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
4	IFR		ACTUATOR	N.A	RFS	CP/S-035-080A/AA	AF771400101	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
5	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
6	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323301	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
7	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
8	IFR	25-BDV-005	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
9	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
10	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620020001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
11	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400201	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
12	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
13	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323309	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
14	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
15	IFR	25-BDV-007	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
16	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
17	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620030001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
18	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400301	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
19	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
20	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323302	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
21	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
22	IFR	25-BDV-010	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
23	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
24	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620040001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
25	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400401	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
26	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
27	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323292	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
28	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
29	IFR	25-BDV-013	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
30	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
31	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620050001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
32	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400501	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
33	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
34	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323305	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
35	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
36	IFR	25-BDV-016	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
37	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
38	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620060001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
39	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400601	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
40	IFR		FILTER REGULATOR	N.A	BIFOLD	F.R. BIFOLD 1/4" SH06-FR-SR-MD-10-X4	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR F.R.	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
41	IFR		RELIEF	N.A	NGI	D10/S INOX+VITON T.4,7 bar	024323295	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR RELIEF	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
42	IFR		PRESSURE GAUGE	N.A	WIKA	233.50.63	NOT AVAILABLE	NO	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR PRESSURE GAUGE	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE
43	IFR	25-BDV-019	LIMIT SWITCHES BOX	N.A	SOLDO	FP06P-S1-04-32-NU-V-77A-24D-57	NOT REQUIRED IN PROJECT	Ex II 2GD Ex d IIC T4/T6	123A90-DDL-IN-DS-40030	CML 19ATEX1359X	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	YES
44	IFR		SOLENOID VALVE	N.A	BIFOLD	SQN120E-20X23L7	NOT REQUIRED IN PROJECT	Ex db IIC T6 / Ex tb IIIC T85°C Db	123A90-DDL-IN-DS-40030	Baseefa10ATEX0026	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
45	IFR		floating ball valve	N.A	FLUITEK	4" 300#	2400620070001	Ex db IIC T6 / Ex tb IIIC T85°C Db	TF ATEX/2020	557/Ex-Ab 3221/20	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	NO	NONE
46	IFR		ACTUATOR	N.A	RFS	CP/S-055-200A/BA	AF771400701	II 2 G Ex h IIC T5 Gb X II 2 D Ex h IIIC T5 Db X	123A90-DDL-IN-DS-40030	NOT EXISTING A ATEX CERTIFICATE FOR ACTUATOR	Zone 2, Gas Group IIC	N.A	1724000204	FLUITEK VALVES Srl	N.A	N.A	YES	NONE

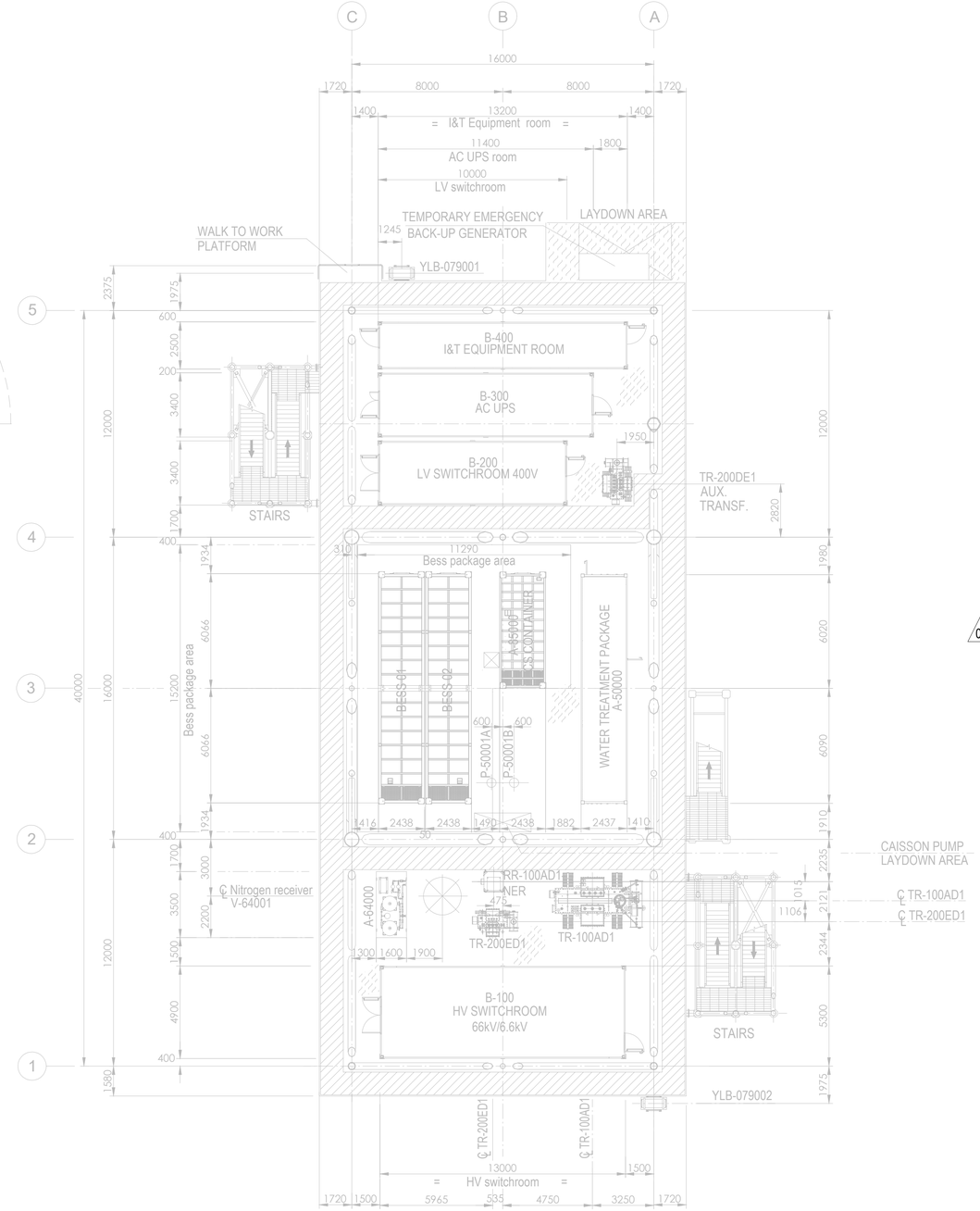
Tag Number	Tag Description	Location	P.O.	Vendor	Manufacturer	Serial Number	Model Type Catalogue Number	Installation Zone	ATEX Certificate Number	Reference Document	ATEX Certification Marking	Notes / Comments	Skid / Package	Electrical Equip.	Barrier Calculation Ref.	Special Conditions of Safe Use Applicable	3D Location
00-JE-11001	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11002	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-11003	PCS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-11004	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-11005	PCS Analog JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12001	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12002	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12003	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-12004	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12005	PCS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87928	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
00-JE-12006	PCS Digital Input JB	LOWER DECK	1724001299	Cortem Spa	Cortem Spa	24/87932	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13001	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-LIS-00005	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	
00-JE-13002	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-13003	PCS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa		CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-21001	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87929	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-21002	SIS Analog JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87925	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-22001	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87933	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-22002	SIS Digital Input JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87934	CTB484820S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
00-JE-23001	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87930	CTB303020S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1
00-JE-23002	SIS Digital Output JB	UPPER DECK	1724001299	Cortem Spa	Cortem Spa	24/87927	CTB262616S1	Zone 1	CESI 03 ATEX 333	1724001299-IN-DA-00003	Ex eb IIC T6 Gb	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_1
25-BDV-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDV-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDV-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDV-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDV-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N/A	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-BDY-005	Vessel V-25001A Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
25-BDY-007	Vessel V-25001B Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-010	Vessel V-25001C Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_8 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-013	Vessel V-25001D Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-BDY-016	Vessel V-25001E Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-BDY-019	Vessel V-25001F Hydrogen vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_6 HAZARDOUS-AREA_3
25-BDY-022	Hyrogen from vessels outlet header vent system	LOWER DECK	1724000204	RFS	SOLDO	N.A.	FP06P-S1-04-32-NU-V-77A-24D-57	Zone 2, Gas Group IIC	CML 19ATEX1359X	1724000204-IN-DG-00006	Ex II 2GD Ex d IIC T4/T6	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_6
25-FT-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FT-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_1 HAZARDOUS-AREA_4
25-FT-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_4
25-FT-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FT-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000791	Brooks Instrument	Brooks Instrument	3809G-211095	3809GCA10AGBC3D2C0AC	ATEX Zone2 - IIC (IIB+H2) T1	DEKRA 13ATEX0086 X	1724000791-IN-DA-00003	II 2G Ex-d IIC T1	N/A	N/A	True	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FV-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FV-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FV-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FV-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FV-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FV-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407		II 2G Ex h IIC T6..T1 Gb X	1724000740-IN-DA-00004	CE Ex - II 2 G Ex h IIC T6...T1 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-FY-031	Nitrogen to V-25001A vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400583	CV-8407	II 2G	ATEX - SN 2400583	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2
25-FY-032	Nitrogen to V-25001B vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400584	CV-8407	II 2G	ATEX - SN 2400584	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4 HAZARDOUS-AREA_1 HAZARDOUS-AREA_2
25-FY-033	Nitrogen to V-25001C vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400585	CV-8407	II 2G	ATEX - SN 2400585	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4 HAZARDOUS-AREA_1
25-FY-034	Nitrogen to V-25001D vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400586	CV-8407	II 2G	ATEX - SN 2400586	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_4
25-FY-036	Nitrogen to V-25001F vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400587	CV-8407	II 2G	ATEX - SN 2400587	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
25-FY-038	Nitrogen to V-25001E vessel	LOWER DECK	1724000740	AST SpA	AST SpA	2400588	CV-8407	II 2G	ATEX - SN 2400588	1724000740-IN-DA-00004	II 2G Ex-d IIC T1	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_4
25-PG-031	Air set Pressure Gauge Filter	LOWER DECK	1724000740	AST SpA	SITECNA	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	FR04 Pressure Gauge	ATEX ZONE 2	FR08411S00SSNB2 TRACE 24/1638 - PRESSURE GAUGE MBS6P4S2PN07-ATEX	Sitecna EU - Type Examination Certificate	CE Ex - 2G Ex h IIC T6/T5 Gb X	N/A	N/A	False	N/A	True	HAZARDOUS-AREA_5 HAZARDOUS-AREA_6 HAZARDOUS-AREA_3 HAZARDOUS-AREA_2

DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



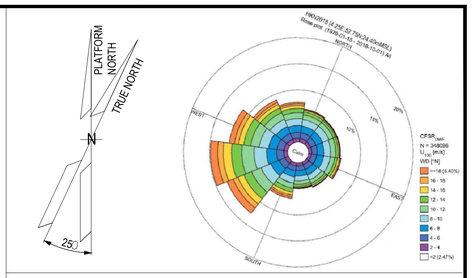
PLAN ON UPPER DECK
EL+30.310 T.O.S.



PLAN ON LOWER DECK
EL+23.310 T.O.S.

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	A-50000	WATER TREATMENT PACKAGE		

Tag No.	Equipment Tag	Description	Material	Ventilation Type
12	A-64000	NITROGEN SYSTEM		
13	B-100	HV SWITCHROOM 66kV/6.6kV		
14	B-200	LV SWITCHROOM 400V		
15	B-300	AC UPS EQUIPMENT ROOM		
16	B-400	I&T EQUIPMENT ROOM		
17	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
18	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
19	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
20	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
21	X-99001	CRANE		
22	V-64001	NITROGEN RECEIVER		



NOTES

1. ALL DIMENSIONS IN mm U.N.O.
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17].
6. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
7. IDENTIFIED EMISSION SOURCES DETAIL.

02
8. FOR DETAILS RELATED TO ELECTROLYSER PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING 224J10-DDL-PP-DA-00001 REV 0.
9. FOR DETAILS RELATED TO FUELL CELL PACKAGE INTERNAL ENCLOSURES REFER TO DRAWING K559-2254-CWIWP4202202-B01-001 REV 009".
10. THE N.6 HYDROGEN STORAGE VESSELS ARE NOT CLASSIFIED INTERNALLY SINCE THEY ARE DESIGNED TO CONTAIN HYDROGEN OR NITROGEN FOR THE ENTIRE DURATION OF THE 2 YEARS OF OPERATION.

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-PP-DS-70072	PLOT PLAN - ELEVATION LOOKING NORTH & EAST

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/25	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

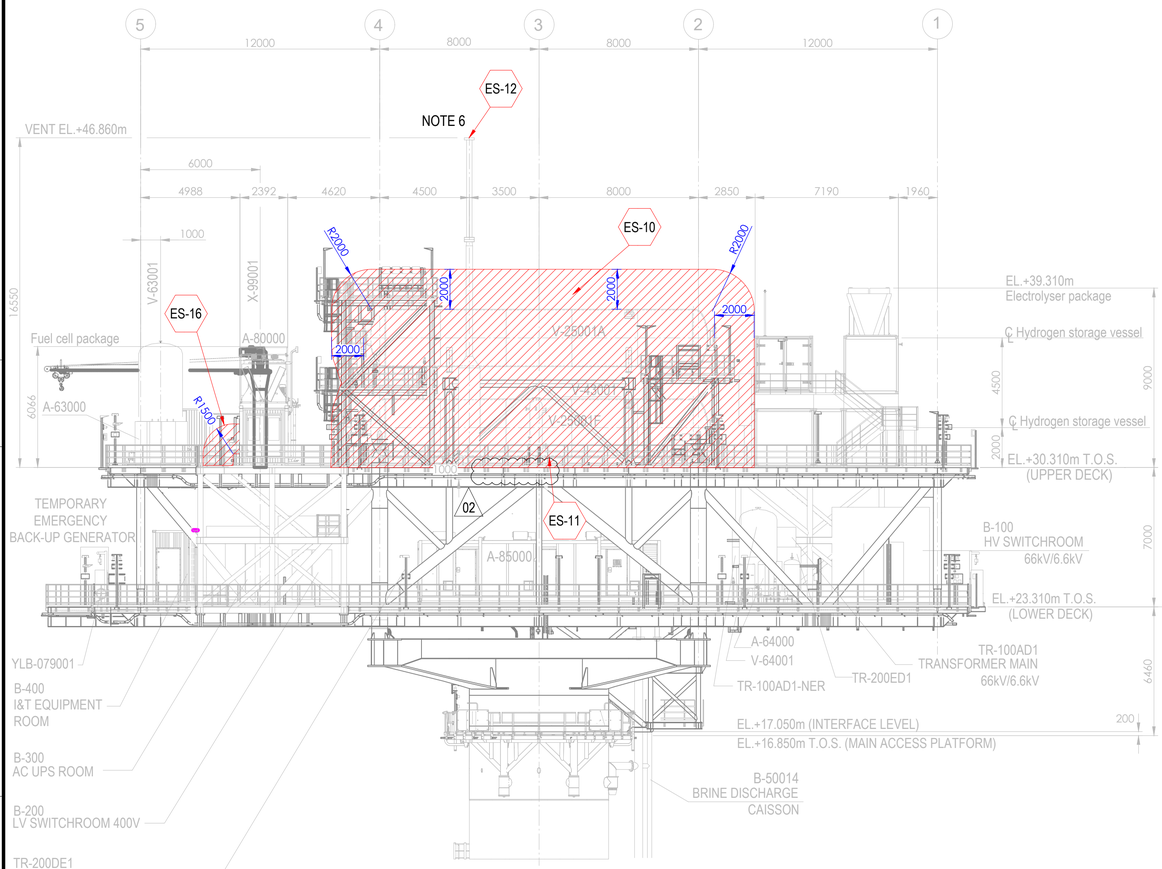
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-SAF-DL-30022	001	02

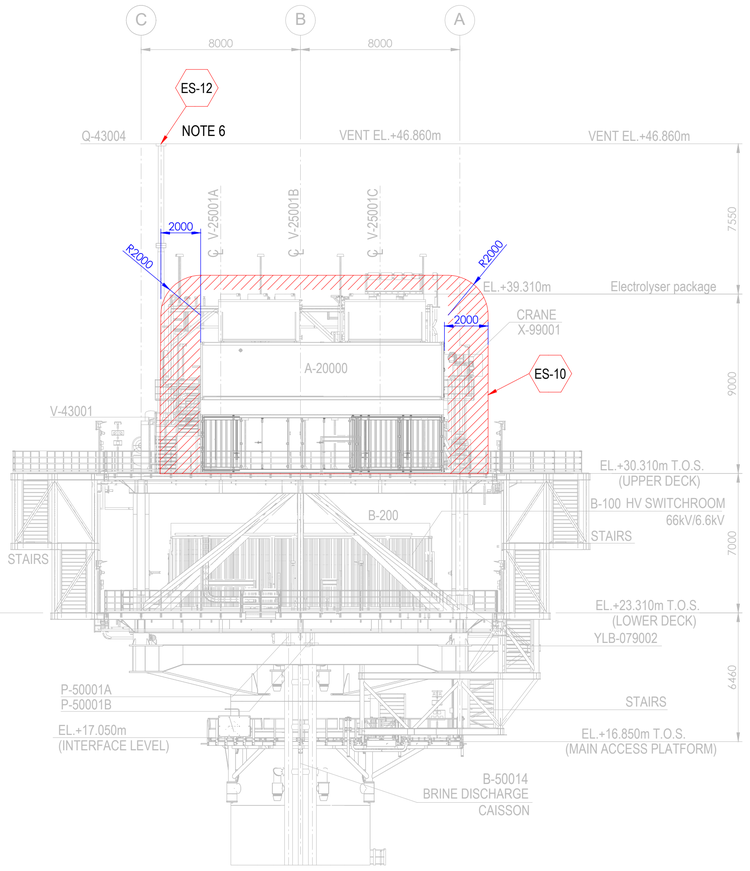
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

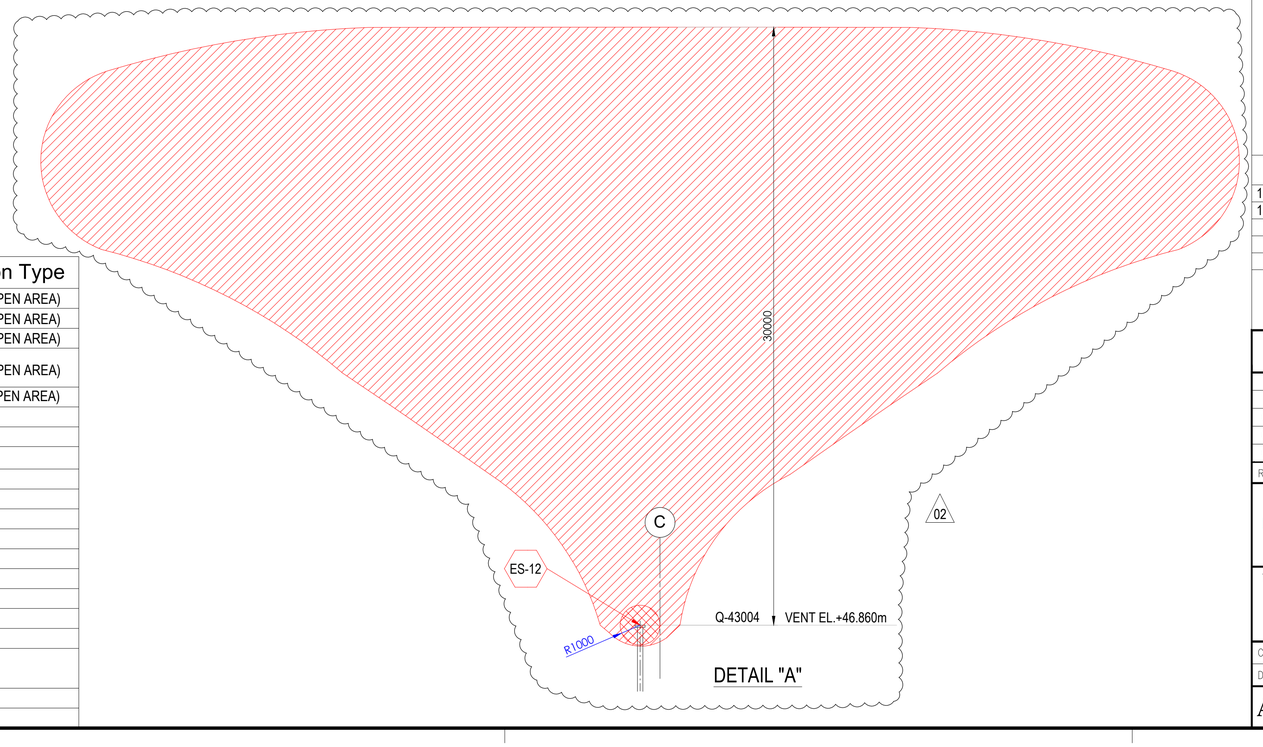


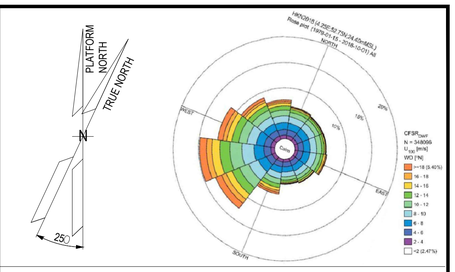
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
02	Q-43004	HYDROGEN VENT	HYDROGEN	NATURAL (OPEN AREA)
03	V-43001	HYDROGEN VENT KO DRUM	HYDROGEN	NATURAL (OPEN AREA)
04	V-25001 (A/B/C/D/E/F)	HYDROGEN STORAGE VESSELS	HYDROGEN	NATURAL (OPEN AREA)
05	V-63001	INSTRUMENT AIR RECEIVER	INSTRUMENT AIR	NATURAL (OPEN AREA)
06	A-20000	ELECTROLYSER PACKAGE		
07	A-63000	INSTRUMENT AIR PACKAGE		
08	A-80000	FUEL CELL PACKAGE		
09	A-85000	BESS PACKAGE		
10	YLB-079001/2	LIFE RAFTS		
11	B-100	HV SWITCHROOM 66kV/6.6kV		
12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
15	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		
16	TR-100AD1-NER	NEUTRAL EARTHING RESISTOR		
17	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV		
18	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT		
19	X-99001	CRANE		
20	V-64001	NITROGEN RECEIVER		





NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PLATFORM NORTH DIRECTION IS N 25°W.
4. VENT TOP SHALL BE REACHEABLE FOR MAINTENANCE PURPOSE.
5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

EMISSION SOURCE No.	IDENTIFIED AREAS
ES10	HYDROGEN STORAGE VESSLES
ES11	HYDROGEN VENT KO DRUM
ES12	HYDROGEN VENT
ES16	FUEL CELL

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	15/01/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	27/08/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/02/24	MMA	CCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1 | DRAWING NO. 123A90-DDL-SAF-DL-30024 | SHEET 001 | REV. 02

File Name : 123A90-DDL-SAF-DL-30024 Rev.02

NUOVA GENERAL INSTRUMENTS s.r.l.
LOC. CAMPASSO - 29010 PIANELLO VALTIDONE (PC) Italy - Tel. +39 0523994629 - Fax +39 0523997219
http:// www.nuovageneral.it - E-mail: info@nuovageneral.it - P.IVA 01337040339 - C.F. 01317650065
REA-PC 117793 - Reg. Imp.PC 01317650065 - Capitale Sociale € 100.000,00 i.v.

N. 025308839

Tipo: (Typ.): **D10/S INOX**

Dis. : 009-0 Rev. 24/10/22

DICHIARAZIONE DI CONFORMITÁ UE Allegato IV, D. E. 2014/68/UE - Allegato VIII, D.E. 2014/34/UE
DECLARATION OF CONFORMITY EU Annex IV, E. D. 2014/68/EU - Annex VIII, E.D. 2014/34/EU
KONFORMITATSERKLARUNG EU Anlage IV Richtlinie 2014/68/EU - Anlage VIII Richtlinie 2014/34/EU
DECLARATION DE CONFORMITÉ UE Annexe IV D.E. 2014/68/UE - Annex VIII D.E. 2014/34/UE

VALVOLA DI SICUREZZA
SAFETY VALVE
SICHERHEITSVENTIL
SOUPAPE DE SURETE

PROGETTO , COSTRUZIONE E COLLAUDO CONFORME ALLA DIRETTIVA 2014/68/UE - 15/05/14 CATEGORIA IV Modulo H1
DESIG , MANUFACTURE AND TEST ACCORDING TO 2014/68/EU DIRECTIVE - 15/05/14 CLASS IV Module H1
PROJEKT , KONSTRUKTION UND ABNAHMEPRUFUNG GEMAB EG-RICHTLINIE 2014/68/EU - 15/05/14 KATEGORIE IV Formblatt H1
PROJET,FABRICATION ET VERIFICATION CONFORME A LA DIRECTIVE 2014/68/UE-15/05/14 CATEGORIE IV Module H1

Garanzia qualità totale Nr. : **Full quality assurance system Nr. :**
Garantie gesamte Qualität Nr. : **Garantie qualité totale Nr.:**
Module H1 : DGR-0036-QS-1180-24

Norme e spec. utilizzate : (Codes or spec.ref.) : *(Angewandte normen und spezifikationen) :* (Regulements et spec. utilise):
AD-Merkblatt A2 - VdTUV-Merkblatt Sicherheitsventil 100 / Racc."E"1979 / EN80079-36:2016 -37:2016 / ISO4126-1 / AS1271:2003 / EN13648-1 / UNI 10197

Organismo notificato: (Notified body): *(Meldestelle):* (Organisme agree):
TÜV SÜD Industrie Service GmbH
Westendstraße 199
D 80686 Munich
0036

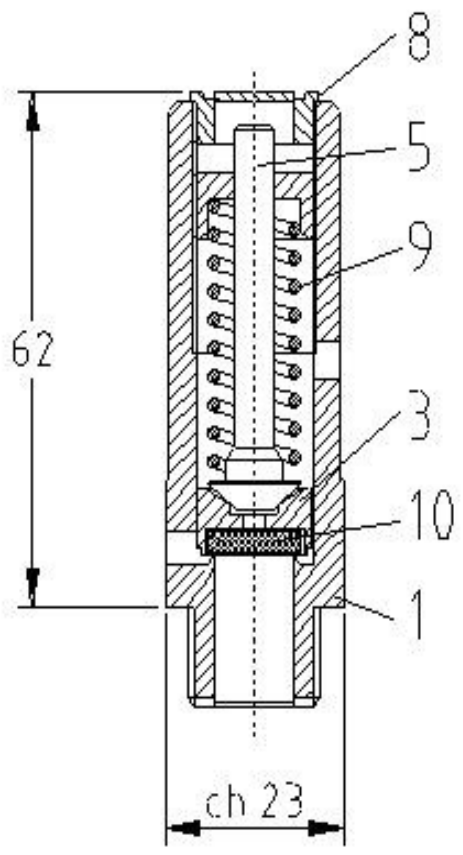
CE Ex II 2G Ex h IIC T6 Gb X
File : TÜV IT 18 ATEX 032 AR

Questa dichiarazione di conformità è rilasciata sotto la sola responsabilità del produttore. - *This declaration of conformity is issued under the sole responsability of the manufacturer.* - Diese Konformitätserklärung wird unter der alleinigen Verantwortung des Herstellers ausgestellt.
Cette déclaration de conformité est émise sous la seule responsabilité du fabricant.

Fluido - *Fluid* - **Fluide**
G / S / L
Group 1 or 2

- Marchio del costruttore: (Manifacturer's Mark): *(Herstellerzeichen):* **(Marquae du constructeur)**

- Materiali: (Material): *(Material):* **(Matériaux):**



1- UNI EN 10088 1.4404
3- UNI EN 10088 1.4404
5- UNI EN 10088 1.4404
8- UNI EN 10088 1.4404
9- UNI EN 10270-3 1.4310

10 VITON (-20 / +200 °C)

Anno costruzione:
(Year of manufacture):
(Baujahr):
(Annee de fabrication):
2025

- P.N.: **60** *(Nenndruck):*

- h / do: **0,4**

- D.N.: (Nominal Diameter): *(Anschlusgewinde):* **(D.N):**

- Entrata: (In): *(Eintritt):* **1/2" NPT** **(Entre):**

- Uscita: (Out): *(Austritt):* **(Sortie):**

- Diametro orifizio: do (Opening diameter): do *(Innen durchmrsser): do* **(Diametre orifice):do** **10** mm

- Area: (Area): *(Offnung):* **(Surface):** **0,785** cm²

- Alzata: h (Valve Lift): h *(Hub): h* **(Haussement): h** **4** mm

- Limiti di temperatura di esercizio dei materiali utilizzati a pressione atmosferica: (Operating temperature limits for materials used at atmospheric pressure): *(Betriebstemperaturgrenze der unter Luftdruck verwendeten Materialien):* **(Limites de température de fonctionnement des matériaux utilisés sous pression atmosphérique):** **-20 / +200 °C**

- Coefficiente di efflusso : (Flow coefficient.): *(AusfluBziffer.):* **(Coefficient d'écoulement** **Kd 0,86**

- Coefficiente di efflusso ridotto : (Reduced flow coefficient): *(Reduzierte Ausflußziffer):* **(Coefficient d'écoulement réduit** **Kdr = 0,9xKd = 0,77**

- Pressione di taratura: (Setting Pressure): *(Abgleichungssdruck):* **(Pression de tarage):** **4,7** bar g

- Variabilità campo di taratura: (Variability Setting Filed): *(Abgleichungsberelch):* **(Variabilite champ de tarage):** **3,1 - 5** bar g

- Sovrappressione: (Overpressure): *(Uber-Unterdruck):* **(Surpression):** **10%** % della pressione di taratura (% of Setting Pressure) *(% Abgieichungsdruck)* **(% De la pression de tarage)**

- Scarto di chiusura: (Closing variation): *(Unterdruck):* **(Ecart de fermature):** **15%** % della pressione di taratura (% of Setting Pressure) *(% Abgieichungsdruck)* **(% De la pression de tarage)**

TIPO FLUIDO: (FLUID TYPE): *(MEDIUM):* (Type de fluide): **ARIA-AIR-LUFT** Temper. : **0** °C
- Scarico in atmosfera: (Discharge in Atmosphere): *(AbfluB gegen Atmosphare):* **(Decharge en atmosphere):** **328,02** kg/h **253,73** Nm³ / h **4228,82** lt/min.

TIPO FLUIDO: (FLUID TYPE): *(MEDIUM):* (Type de fluide):
- Scarico in atmosfera: (Discharge in Atmosphere): *(AbfluB gegen Atmosphare):* **(Decharge en atmosphere):** kg/h Nm³ / h lt/min.

TIPO FLUIDO: (FLUID TYPE): *(MEDIUM):* (Type de fluide):
- Scarico in atmosfera: (Discharge in Atmosphere): *(AbfluB gegen Atmosphare):* **(Decharge en atmosphere):** kg/h Nm³ / h lt/min.

Si dichiara che la valvola ha subito con buon esito il controllo finale compreso il test di tenuta (90% Pset) e la prova idraulica del corpo a 1,5 x P.N.
We declare that this valve has passed successfully the test, the seat tightness test (90% Pset) and the hydraulic test of the body to 1,5 x P.N.
Hiermit bestätigen wir, dass das Ventil die Abschlusskontrolle einschließlich der Sitzdichtheit (90%Pset) und hydraulischen Gehäuseprüfung mit einem Druck von 1,5 x P.N.
On declare que la soupape a ete soumise avec resultat satisfiant a le control final y-compri l'epreuve d'étanchéité (90% Pset) et l'epreuve hydraulique du corps a 1,5xPN.

EN 10204 3.1 Cod. : **00F16D10SSVNPAX047**

Nr.Ord. : D2500700 REV 1

S.V. Code : 00F16D10SSVNPAX047

Date : 17/04/2025

NUOVA GENERAL INSTRUMENTS SRL
Albertini Patrizia (CEO)

NUOVA GENERAL INSTRUMENTS

	I Descrizione ATEX-UKEX	GB Atex-UKEX Description	D *Beschreibung ATEX-UKEX*	F Description ATEX-UKEX	ES Descripción ATEX-UKEX
	Simbolo rappresentativo per dispositivi certificati ATEX-UKEX	Representative symbol of ATEX-UKEX certified equipment	*Repräsentatives Symbol für ATEX-UKEX zertifizierte Geräte*	Symbole représentatif des équipements certifiés ATEX-UKEX	*Símbolo representativo para dispositivos con certificación ATEX-UKEX*
II	Gruppo dell'apparecchio	Equipment's group	*Gerätegruppe*	Groupe d'appareils	*Grupo de dispositivos*
2	Categoria dell'apparecchio	Equipment's category	*Gerätekategorie*	Catégorie d'appareils	*Categoría de dispositivos*
G	Protezione delle atmosfere esplosive dovute a presenza di GAS, VAPORI E NEBBIE	Protected to explosive atmosphere due to GAS, STEAM and FOG	*Schutz explosionsfähiger Atmosphären durch GAS, DAMPF UND NEBEL*	Protection des atmosphères explosives grâce à la présence de GAZ, VAPEURS ET BROUILLARDS	*Protección de atmósferas explosivas debido a la presencia de GAS, VAPOR Y NIEBLA*
GD	Protezione delle atmosfere esplosive dovute a presenza di GAS, VAPORI, NEBBIE, NUBI e POLVERI	Protected to explosive atmosphere due to GAS, STEAM, FOG and DUST	*Schutz explosionsfähiger Atmosphären durch GAS, DAMPF, NEBEL, WOLKEN und PULVER*	Protection des atmosphères explosives grâce à la présence de GAZ, VAPEURS, BROUILLARDS, NUAGES et POUSSIÈRES	*Protección de atmósferas explosivas debido a la presencia de GAS, VAPORES, NIEBLA, NUBES y POLVO*
Ex h (Type of protection "c" constructional safety)	Indicazione di apparecchiatura non elettrica	Non-electrical equipment indication	*Hinweis auf nichtelektrische Geräte*	Indication des équipements non électriques	*Indicación de equipos no eléctricos*
IIC	Sottodivisione del gruppo di apparecchi	Equipment group subdivision	*Unterteilung der Gerätegruppe*	Subdivision du groupe d'appareils	*Subdivisión del grupo de dispositivos*
T6	Temperatura massima di parete ≤85°C	Maximum surface temperature ≤85°C	*Maximale Oberflächentemperatur ≤85 ° C*	Température maximale de paroi ≤85 ° C	*Temperatura máxima de la pared ≤85 ° C*
Gb	Equipment Protection Level (EPL)	Equipment Protection Level (EPL)	*Equipment Protection Level (EPL)*	Equipment Protection Level (EPL)	*Equipment Protection Level (EPL)*
GbDb	Equipment Protection Level (EPL)	Equipment Protection Level (EPL)	*Equipment Protection Level (EPL)*	Equipment Protection Level (EPL)	*Equipment Protection Level (EPL)*
X	La massima temperatura superficiale potrebbe essere superiore alla classe di temperatura, si raccomanda come massima temperatura il valore maggiore tra T6 e la max Temperatura ammissibile per la tenuta (V. COC)	The max surface temperature could be higher than the temperature class, it is recommended as max temperature the higher value between T6 and the max Admissible temperature for the seal (V. COC)	*Die max. Oberflächentemperatur kann höher sein als die Temperaturklasse, als max. Temperatur wird der höhere Wert zwischen T6 und der max. zulässigen Temperatur für die Dichtung (V. COC) empfohlen.*	La température de surface maximale peut être supérieure à la classe de température, il est recommandé comme température maximale la valeur la plus élevée entre T6 et la température maximale admissible pour le joint (V. COC)	*La temperatura máxima de la superficie podría ser superior a la clase de temperatura, se recomienda como temperatura máxima el valor más alto entre T6 y la temperatura máxima admisible para el sello (V. COC)*

Rotork Fluid Systems s.r.l.
Via padre Jacques Hamel, 138 B
55016 Porcari, Lucca
Italy

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Fax. +39 0585 091362
http://www.rotork.com

rotork
Fluid Systems

DECLARATION

Rotork Fluid Systems s.r.l. herewith declares that for the job AF7703, as the supplier of the following equipment:

Product: Safety Relief Valve (PSV)
Type/Model: D10/S INOX
Serial Number(s): 025308828; 025308829; 025308830; 025308831; 025308832; 025308833; 025308834; 025308835; 025308836; 025308837; 025308838; 025308839; 025308840; 025308841; 025308842; 025308843; 025308844; 025308845; 025308846; 025308847; 025308848; 025308849; 025308850; 025308851; 025308852; 025308853; 025308854; 025308855.
Intended Use: Installation in ATEX Zone 2 – Gas Group IIC / IIB + H_2
Category: II 2G
Protection Type: Ex h IIC T6 Gb X (non-electrical equipment)

Hereby declares under its sole responsibility that the above equipment has been purchased in full compliance with the requirements of:

- Directive 2014/34/EU (ATEX)
- Harmonised standards: EN ISO 80079-36:2016 and EN ISO 80079-37:2016
- The relevant essential health and safety requirements as set out in Annex II of Directive 2014/34/EU.

This product is not yet in service and is currently installed but not operational. According to applicable legislation and guidance (including the Blue Guide 2022 and ATEX Guidelines 3rd Edition, July 2023), the CE and ATEX markings can be legitimately applied, even if the equipment has already been installed.
The conformity assessment procedure followed is: Internal production control (Annex VIII – Module A), with the technical documentation deposited with the Notified Body:
Notified Body: TUV SUD Italia – NB N° 0948
Reference: TUV IT 18 ATEX 032 AR
We hereby authorise the application of the ATEX marking in situ, under our responsibility, following the above.
This declaration is issued under the sole responsibility of the supplier.

Lucca, 18/04/2025

On behalf of Rotork Fluid Systems s.r.l.

Lucia Fregoli – Quality Manager

Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC & discipline : I

Instrumental	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
25-FT-038	Flow Transmitter - Nitrogen to V-25001E Vessel	ONSHORE	C10000921	TJX04	100	2024-12-14	RFC 1
25-PT-011	Pressure Transmitter - Vessel V-25001E Hydrogen Vent System	ONSHORE	C10000928	TJX04	100	2024-10-02	RFC 1
25-PT-046	Pressure Transmitter - Vessel V-25001E Pressure Control	ONSHORE	C10000934	TJX04	100	2024-10-02	RFC 1
25-RO-016	Restriction Orifice - Vessel V-25001E Hydrogen vent system	ONSHORE	C10001213	CJX11	100	2025-02-13	RFC 1
		ONSHORE	C10001441	TJX11	100	2024-12-19	RFC 1
AV-63002/25-FV-038	Pneumatic Connection Air Supply - 25-FV-038	ONSHORE	C10001947	CJX06	100	2025-02-04	RFC 1
AV-63012/25-BDV-016	Pneumatic Connection Air Supply - 25-BDV-016	ONSHORE	C10001983	CJX06	100	2025-02-17	RFC 1
AV-63012/25-PV-046	Pneumatic Connection Air Supply - 25-PV-046	ONSHORE	C10001982	CJX06	100	2025-02-17	RFC 1
C-25-BDV-016/00-JE-22001	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000144	CJX10	100	2025-02-18	RFC 1
C-25-BDY-016/00-JE-23001	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000174	CJX10	100	2025-02-17	RFC 1
C-25-FT-038/00-JE-11003	FLOW TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000034	CJX10	100	2025-01-24	RFC 1
C-25-FY-038/00-JE-11003	E/P POSITIONER / MARSHALLING PCS	ONSHORE	C10000039	CJX10	100	2025-01-25	RFC 1
C-25-PT-011/00-JE-21001	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000134	CJX10	100	2025-02-18	RFC 1
C-25-PT-046/00-JE-11001	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000007	CJX10	100	2025-02-18	RFC 1
C-25-PY-046/00-JE-11001	E/P POSITIONER / MARSHALLING PCS	ONSHORE	C10000013	CJX10	100	2025-02-18	RFC 1
C-25-ZSH-038/00-JE-12005	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000101	CJX10	100	2025-01-25	RFC 1
C-25-ZSH-046/00-JE-12001	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000068	CJX10	100	2025-02-18	RFC 1
C-25-ZSL-038/00-JE-12005	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000100	CJX10	100	2025-01-25	RFC 1
C-25-ZSL-046/00-JE-12001	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000067	CJX10	100	2025-02-18	RFC 1
C-25-ZT-038/00-JE-11003	POSITION TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000047	CJX10	100	2025-01-25	RFC 1
C-25-ZT-046/00-JE-11001	POSITION TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000019	CJX10	100	2025-02-18	RFC 1

ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-25-PT-046/00-JE-11001	: PRESSURE TRANSMITTER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000007	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	25-PT-046	To	00-JE-11001		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,9	Ω
	SCREEN	0,9	Ω
	EARTH	NA	Ω
	ARMr	0,9	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

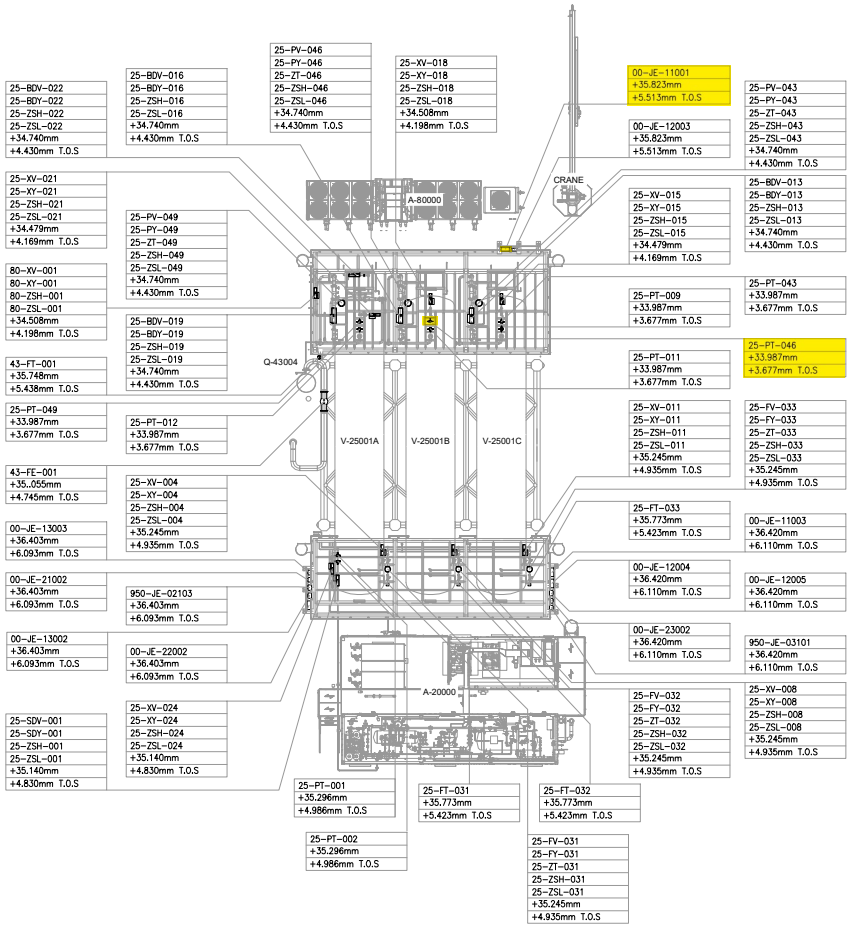
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-18	
Signature	Digitaly signed by Michele Tartaglia 2025-02-05T14:31:59.065Z	Digitaly signed by Alessio Polo 2025-02-18T14:55:33.854Z	

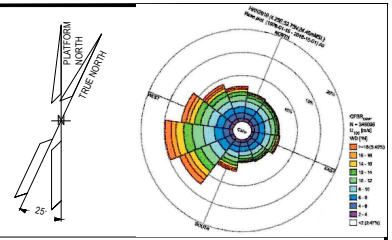
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

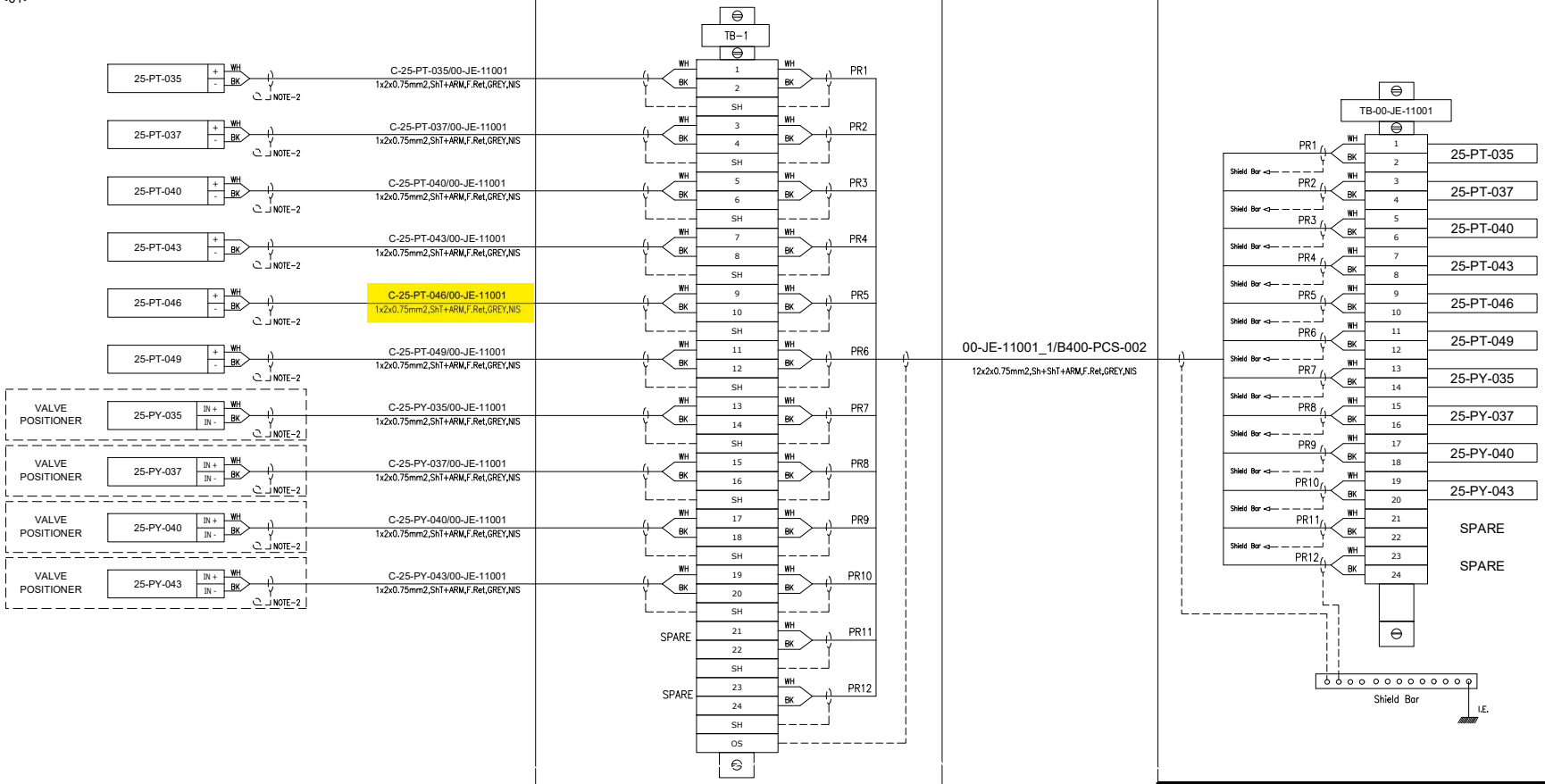
ROSETTI MARINO SpA

File Name: - 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11001	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40015

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11001–SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

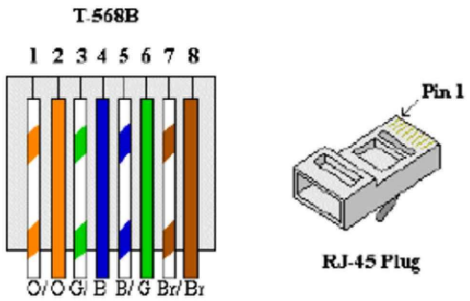
A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	004	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

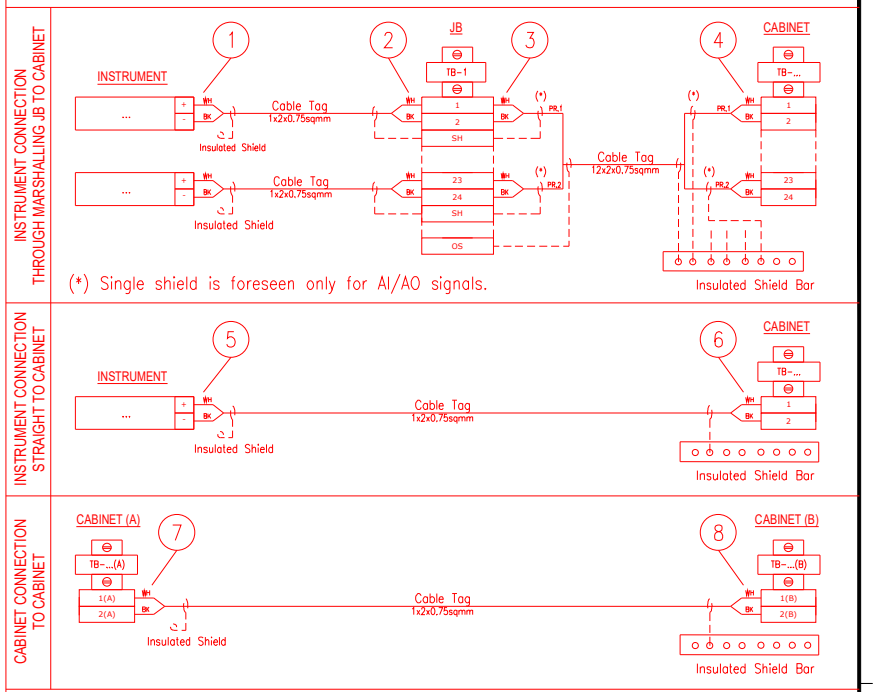


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

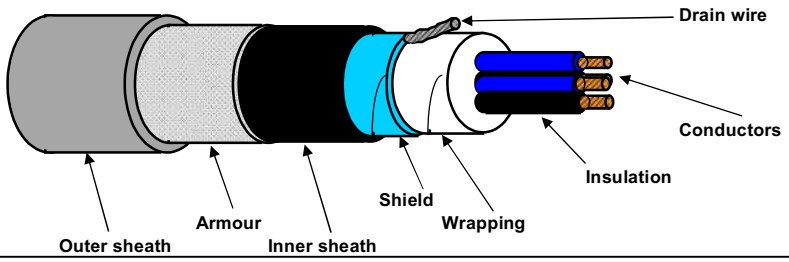
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-PT-046/00-JE-11001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-PT-046	Pressure Transmitter	Upper Deck		00-JE-11001	AIAO JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-10 / U-SEC-2C / U-SEC-9

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-25-PY-046/00-JE-11001	: E/P POSITIONER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000013	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH | Cores/Size mm²: 1X2X0,75 mm2 | Color: GREY

From: 25-PY-046 | To: 00-JE-11001

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		0,80	Ω
	SCREEN		0,80	Ω
	EARTH		NA	Ω
	ARMr		0,80	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

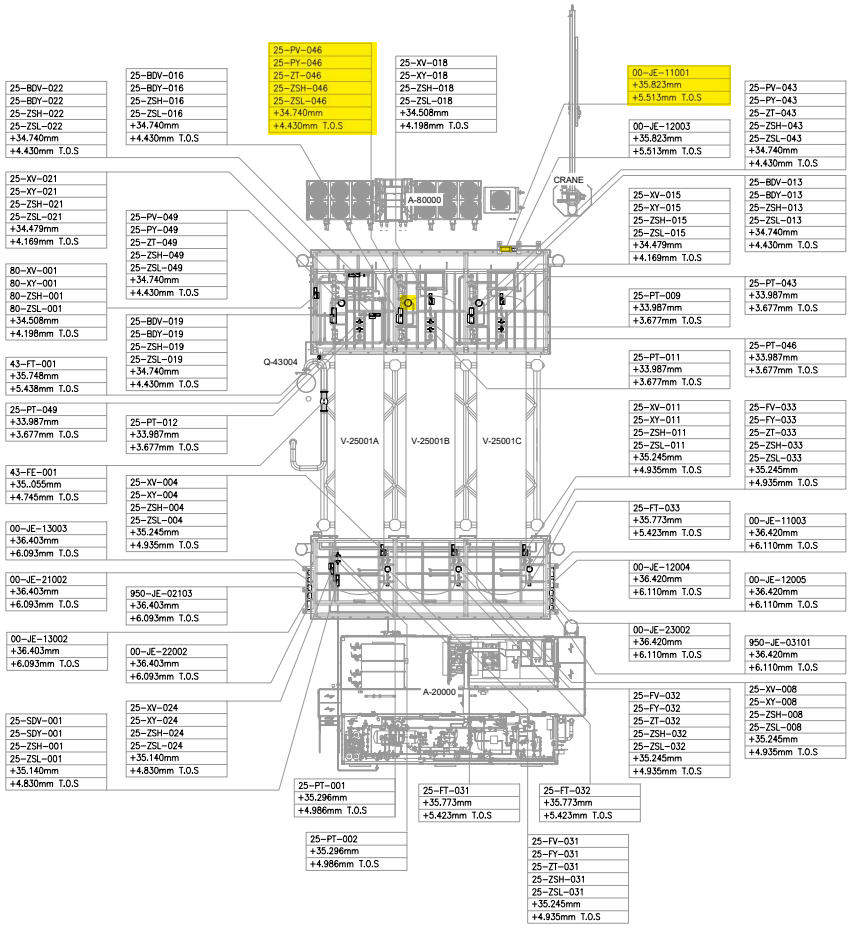
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 | Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000682

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-05	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T14:34:51.655Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T15:29:33.594Z	

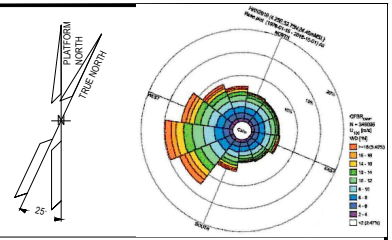
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

File Name : - 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11001	No.	MARSHALLING CABINET B400-PCS-002

<01>

VALVE POSITIONER 25-PY-046 (IN+, IN-, WH, BK) — NOTE-2
C-25-PY-046/00-JE-11001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

VALVE POSITIONER 25-PY-049 (IN+, IN-, WH, BK) — NOTE-2
C-25-PY-049/00-JE-11001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

VALVE POSITIONER 25-ZT-035 (OUT+, OUT-, WH, BK) — NOTE-2
C-25-ZT-035/00-JE-11001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

VALVE POSITIONER 25-ZT-037 (OUT+, OUT-, WH, BK) — NOTE-2
C-25-ZT-037/00-JE-11001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

VALVE POSITIONER 25-ZT-040 (OUT+, OUT-, WH, BK) — NOTE-2
C-25-ZT-040/00-JE-11001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

VALVE POSITIONER 25-ZT-043 (OUT+, OUT-, WH, BK) — NOTE-2
C-25-ZT-043/00-JE-11001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

VALVE POSITIONER 25-ZT-046 (OUT+, OUT-, WH, BK) — NOTE-2
C-25-ZT-046/00-JE-11001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

VALVE POSITIONER 25-ZT-049 (OUT+, OUT-, WH, BK) — NOTE-2
C-25-ZT-049/00-JE-11001
1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

TB-2

WH/BK	25	PR1
	26	
	SH	
WH/BK	27	PR2
	28	
	SH	
WH/BK	29	PR3
	30	
	SH	
WH/BK	31	PR4
	32	
	SH	
WH/BK	33	PR5
	34	
	SH	
WH/BK	35	PR6
	36	
	SH	
WH/BK	37	PR7
	38	
	SH	
WH/BK	39	PR8
	40	
	SH	
SPARE	41	PR9
	42	
	SH	
SPARE	43	PR10
	44	
	SH	
SPARE	45	PR11
	46	
	SH	
SPARE	47	PR12
	48	
	SH	
	OS	

00-JE-11001_2/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-11001

PR1 (Shield Bar)	25	25-PY-046
PR2 (Shield Bar)	26	
PR3 (Shield Bar)	27	25-PY-049
PR4 (Shield Bar)	28	
PR5 (Shield Bar)	29	25-ZT-035
PR6 (Shield Bar)	30	
PR7 (Shield Bar)	31	25-ZT-037
PR8 (Shield Bar)	32	
PR9 (Shield Bar)	33	25-ZT-040
PR10 (Shield Bar)	34	
PR11 (Shield Bar)	35	25-ZT-043
PR12 (Shield Bar)	36	
	37	25-ZT-046
	38	
	39	25-ZT-049
	40	
	41	SPARE
	42	
	43	SPARE
	44	
	45	SPARE
	46	
	47	SPARE
	48	

Shield Bar — I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11001–SH. 2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

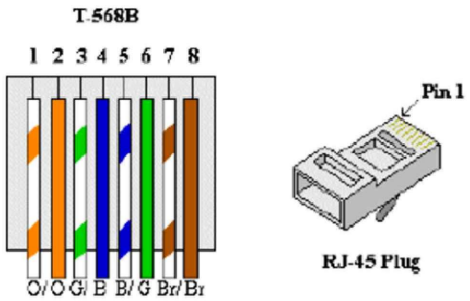
A3	DRAWING NO. 123–A90–DDL–IN–40015	SHEET 005	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

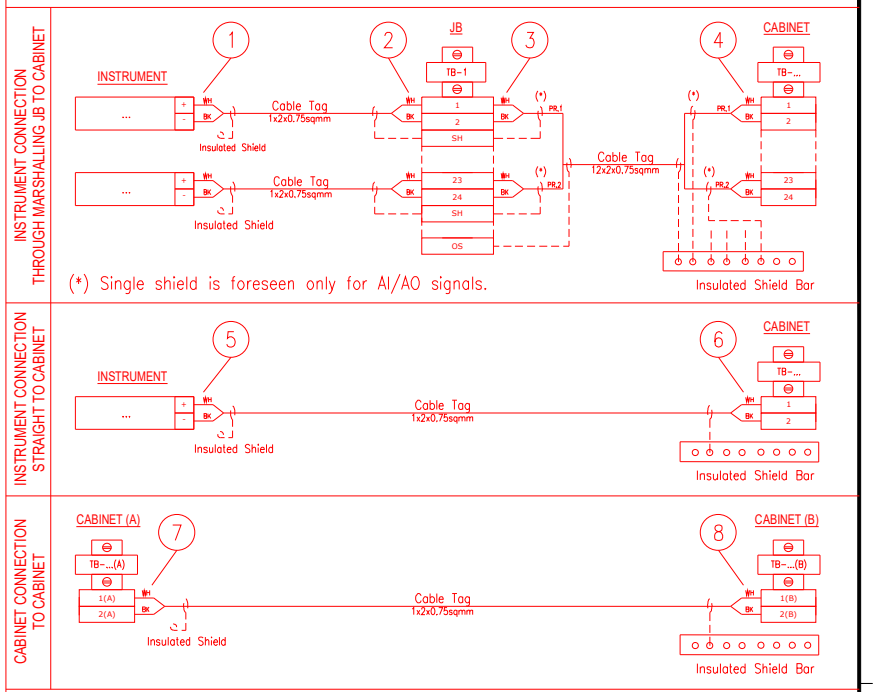


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

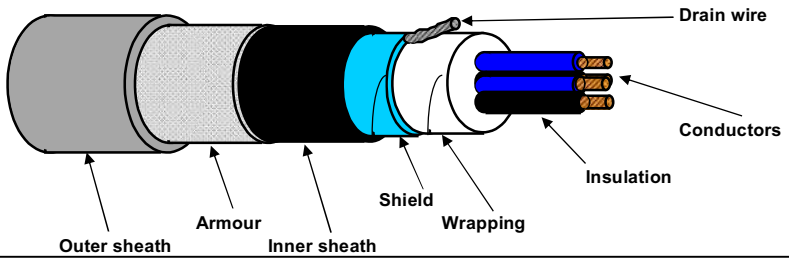
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-PY-046/00-JE-11001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-PY-046	E/P Positioner	Upper Deck		00-JE-11001	AI/AO JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI:2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-10 / U-SEC-2C / U-SEC-9

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-25-ZT-046/00-JE-11001	: POSITION TRANSMITTER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000019	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	25-ZT-046	To	00-JE-11001		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,96	Ω
	SCREEN	0,96	Ω
	EARTH	NA	Ω
	ARMr	0,96	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

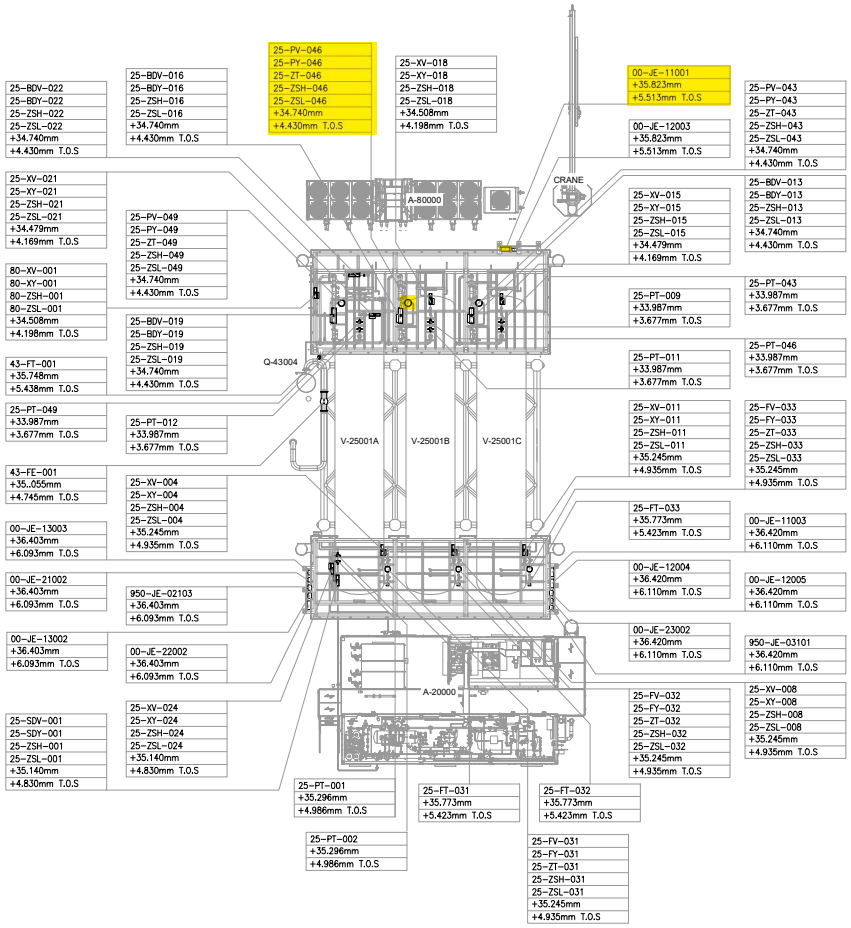
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-05	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T14:36:52.139Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T15:30:28.658Z	

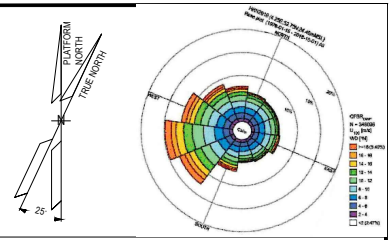
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

File Name : - 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11001	No.	MARSHALLING CABINET B400-PCS-002

<01>

INSTRUMENTS			JUNCTION BOX 00-JE-11001		MULTICABLE No.	I&T EQUIPMENT ROOM (ITER) MARSHALLING CABINET B400-PCS-002	
			TB-2			TB-00-JE-11001	
VALVE POSITIONER	25-PY-046	IN + WH, IN - BK, NOTE-2	C-25-PY-046/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	25 WH, 26 BK, SH	00-JE-11001_2/B400-PCS-002 12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS	PR1 WH, PR1 BK	25-PY-046
VALVE POSITIONER	25-PY-049	IN + WH, IN - BK, NOTE-2	C-25-PY-049/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	27 WH, 28 BK, SH		Shield Bar; PR2 WH, PR2 BK	25-PY-049
VALVE POSITIONER	25-ZT-035	OUT + WH, OUT - BK, NOTE-2	C-25-ZT-035/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	29 WH, 30 BK, SH		Shield Bar; PR3 WH, PR3 BK	25-ZT-035
VALVE POSITIONER	25-ZT-037	OUT + WH, OUT - BK, NOTE-2	C-25-ZT-037/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	31 WH, 32 BK, SH		Shield Bar; PR4 WH, PR4 BK	25-ZT-037
VALVE POSITIONER	25-ZT-040	OUT + WH, OUT - BK, NOTE-2	C-25-ZT-040/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	33 WH, 34 BK, SH		Shield Bar; PR5 WH, PR5 BK	25-ZT-040
VALVE POSITIONER	25-ZT-043	OUT + WH, OUT - BK, NOTE-2	C-25-ZT-043/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	35 WH, 36 BK, SH		Shield Bar; PR6 WH, PR6 BK	25-ZT-043
VALVE POSITIONER	25-ZT-046	OUT + WH, OUT - BK, NOTE-2	C-25-ZT-046/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	37 WH, 38 BK, SH		Shield Bar; PR7 WH, PR7 BK	25-ZT-046
VALVE POSITIONER	25-ZT-049	OUT + WH, OUT - BK, NOTE-2	C-25-ZT-049/00-JE-11001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	39 WH, 40 BK, SH		Shield Bar; PR8 WH, PR8 BK	25-ZT-049
				SPARE 41 WH, 42 BK, SH		Shield Bar; PR9 WH, PR9 BK	SPARE
				SPARE 43 WH, 44 BK, SH		Shield Bar; PR10 WH, PR10 BK	SPARE
				SPARE 45 WH, 46 BK, SH		Shield Bar; PR11 WH, PR11 BK	SPARE
				SPARE 47 WH, 48 BK, SH		Shield Bar; PR12 WH, PR12 BK	
				OS		Shield Bar; I.E.	

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11001–SH. 2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123–A90–DDL–IN–40015	SHEET 005	REV. 01

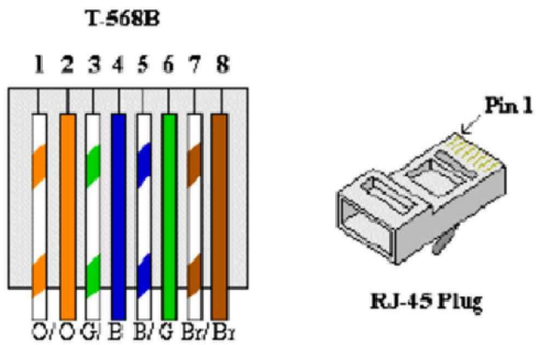
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



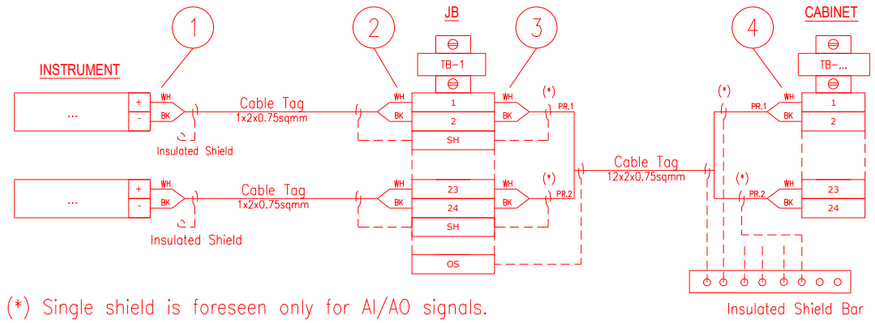
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

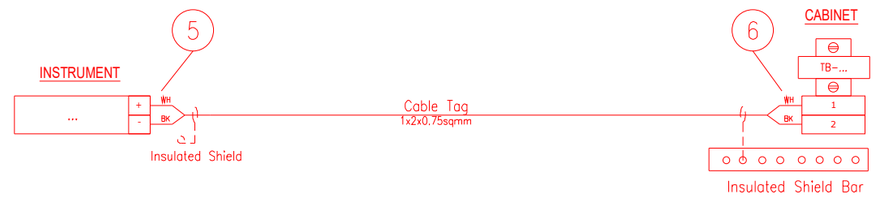
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

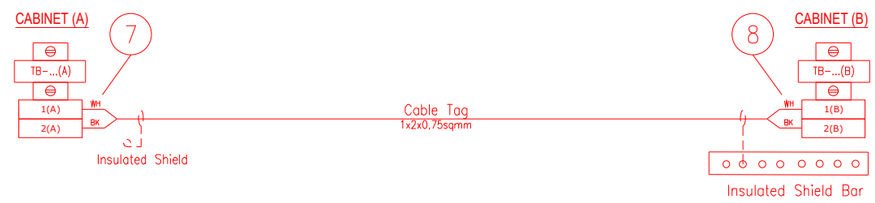
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

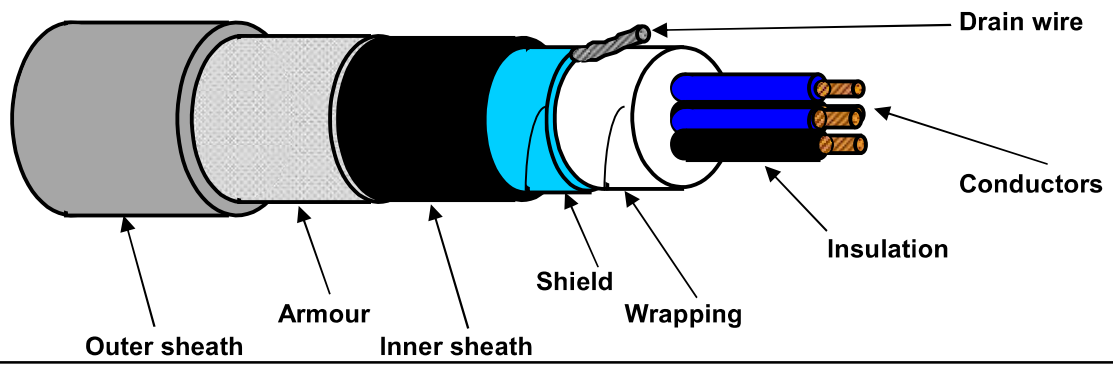
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-ZT-046/00-JE-11001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-ZT-046	Position Transmitter	Upper Deck		00-JE-11001	AIAO JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-10 / U-SEC-2C / U-SEC-9

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO

CROSSWIND

ITEM	Tag	C-25-FT-038/00-JE-11003	: FLOW TRANSMITTER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000034	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	25-FT-038	To	00-JE-11003		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,8	Ω
	SCREEN	0,8	Ω
	EARTH	NA	Ω
	ARMr	0,8	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

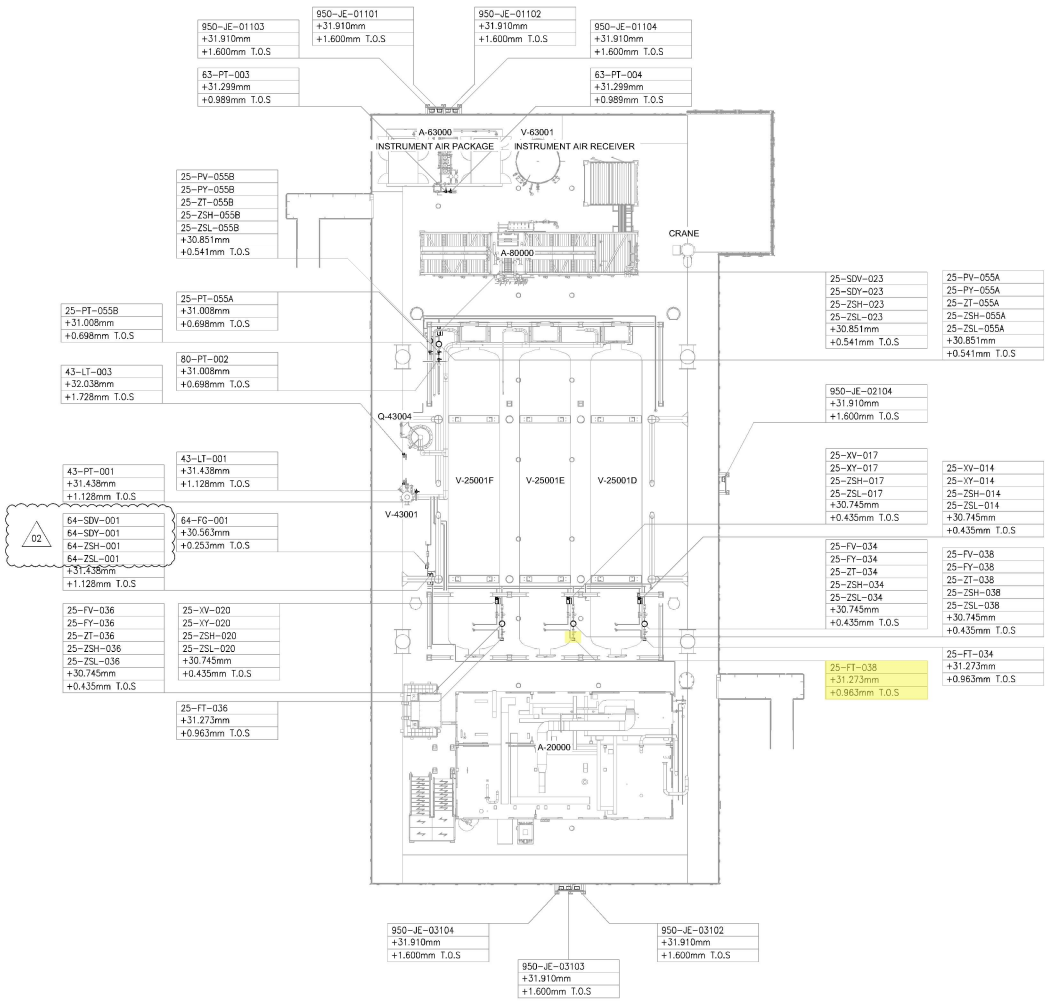
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-23	2025-01-24	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-23T13:23:24.681Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-24T17:00:03.169Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

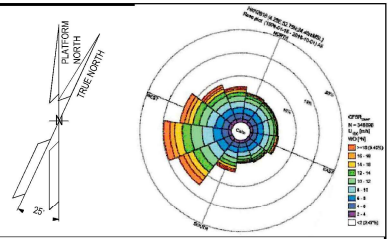
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

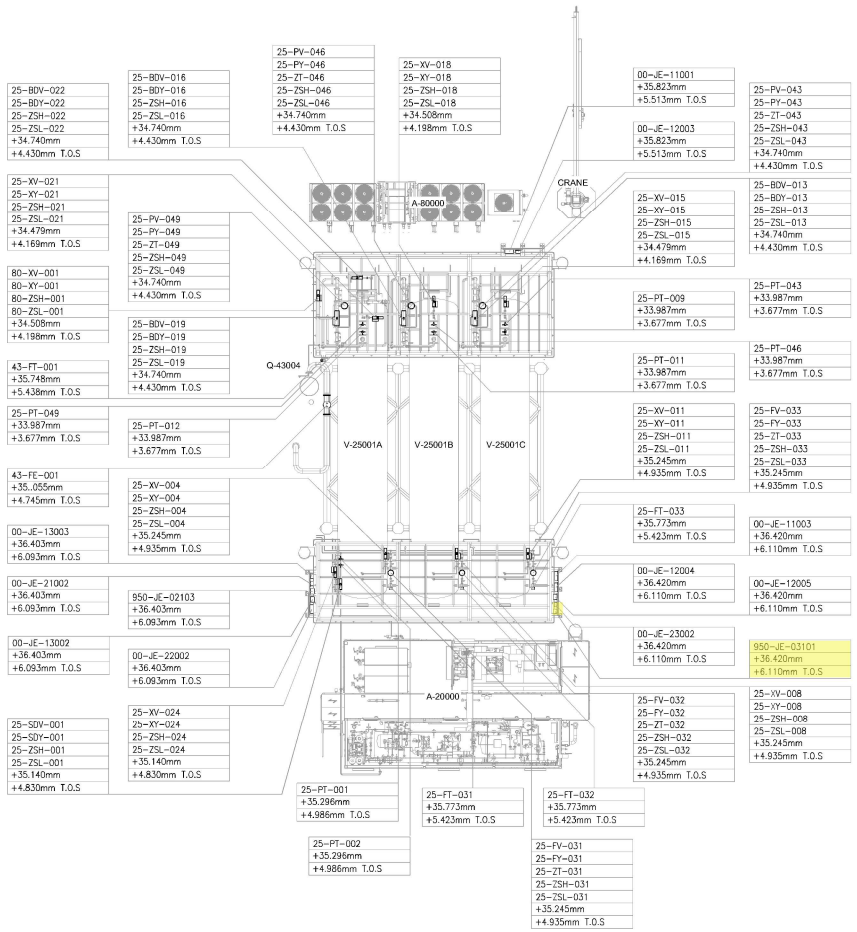
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

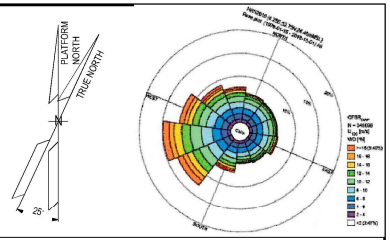
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



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- CONTROL / ON-OFF VALVE

HOLDS

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123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
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123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

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VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

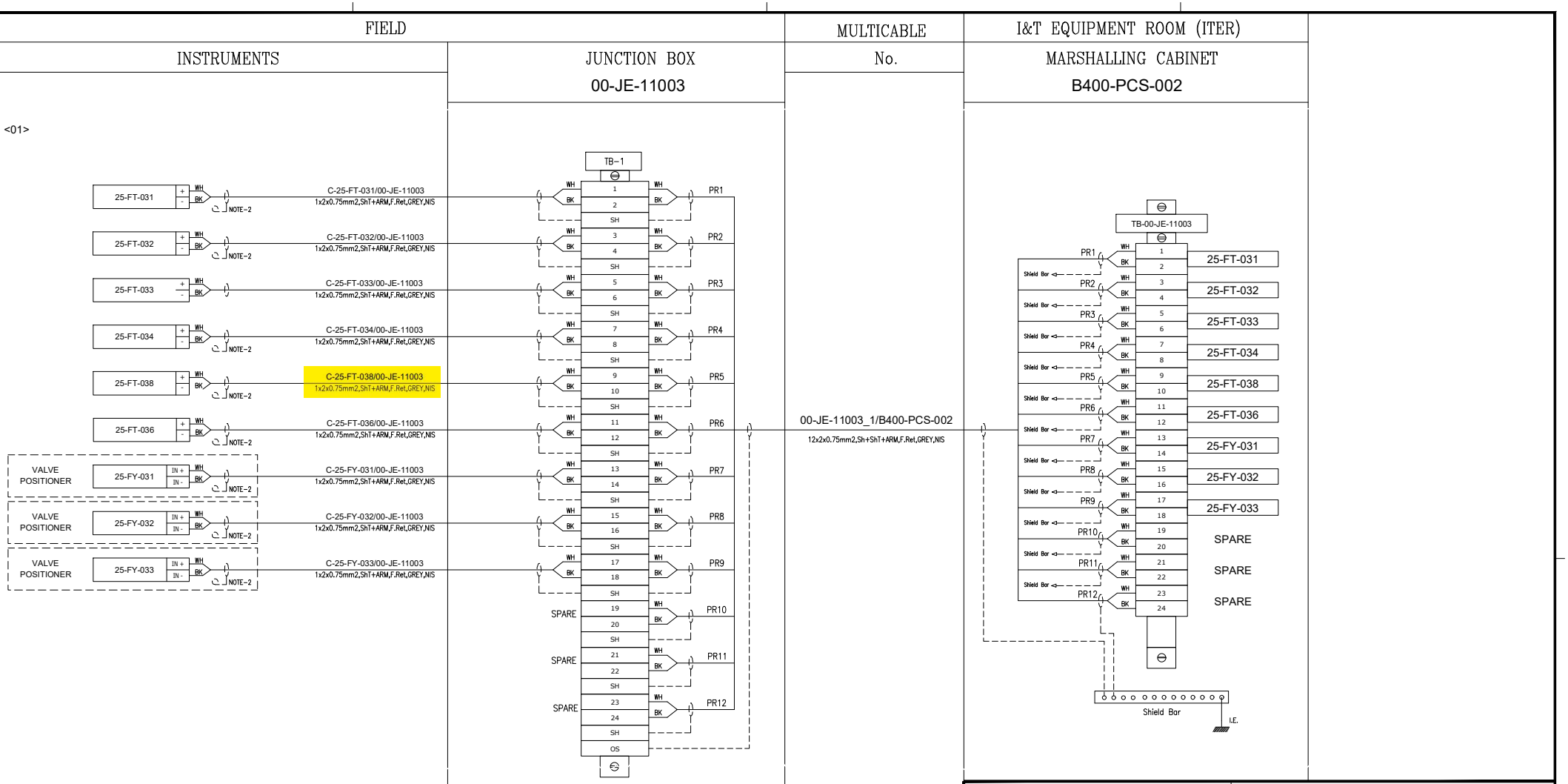
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11003-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

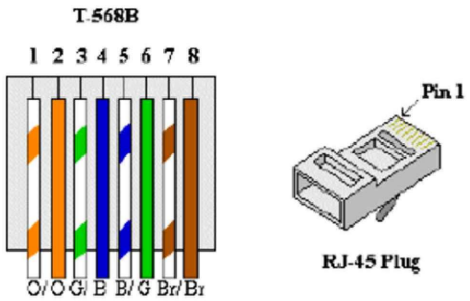
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	123A90-DDL-IN-DG-40015	007	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

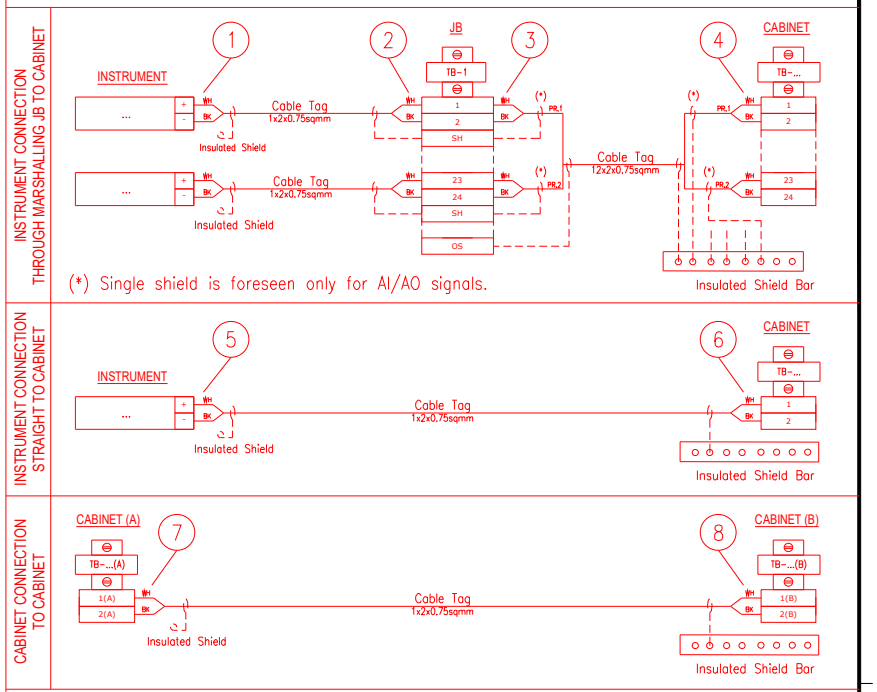


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

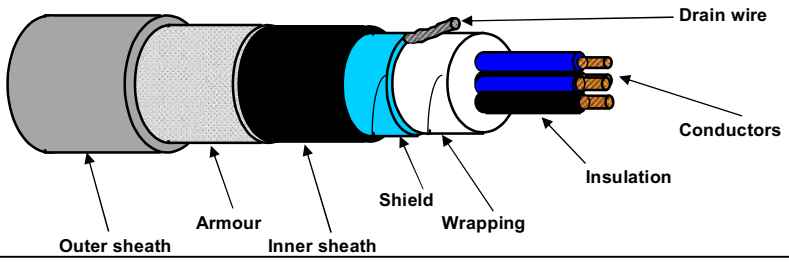
File Name : - 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-FT-038/00-JE-11003	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-FT-038	Flow Transmitter	Upper Deck		00-JE-11003	AIAO JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-18 / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-25-FY-038/00-JE-11003	: E/P POSITIONER / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10000039	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	25-FY-038	To	00-JE-11003		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,9	Ω
	SCREEN	0,9	Ω
	EARTH	NA	Ω
	ARMr	0,9	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

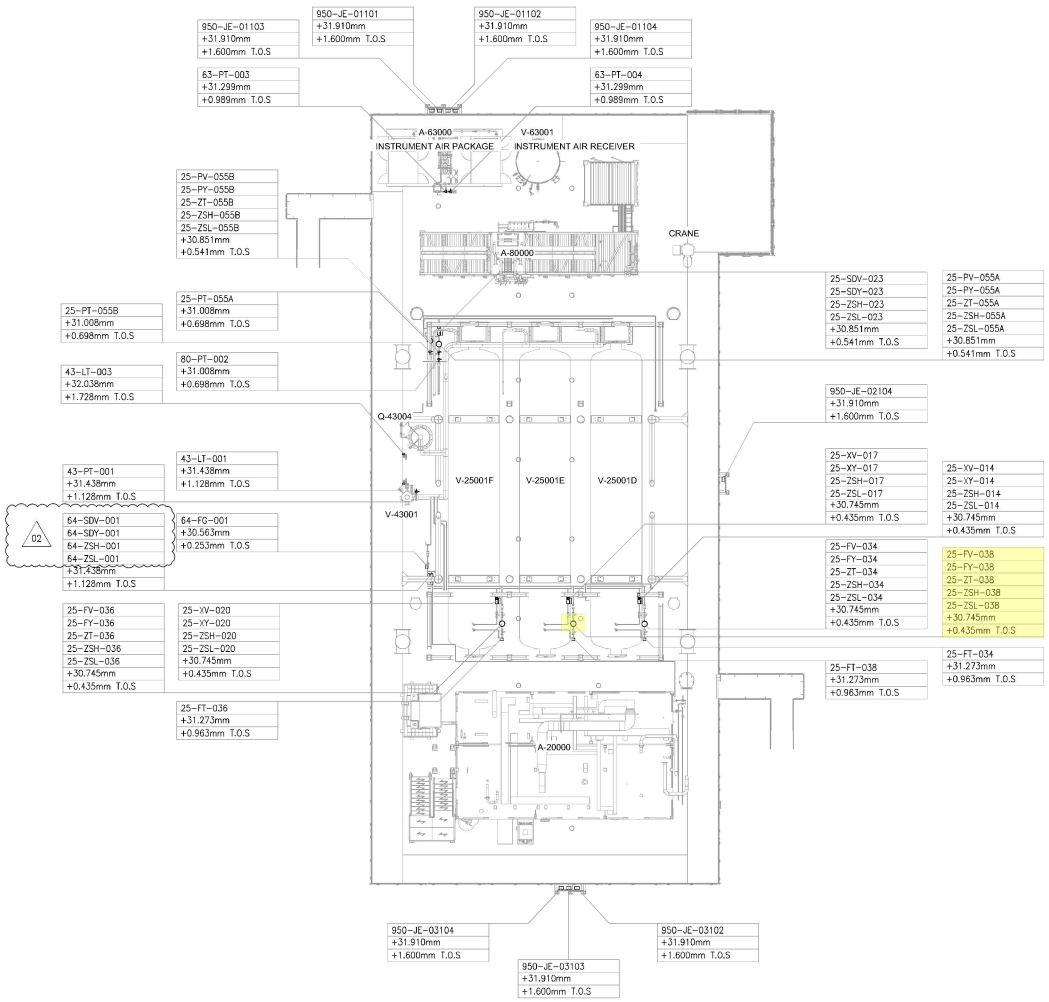
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-23	2025-01-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-23T15:32:54.060Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-25T10:19:28.059Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

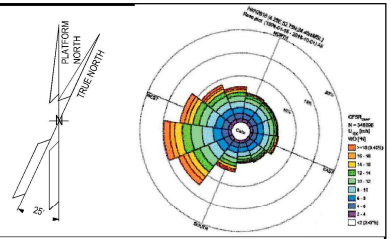
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



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VALID FOR CONSTRUCTION

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REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

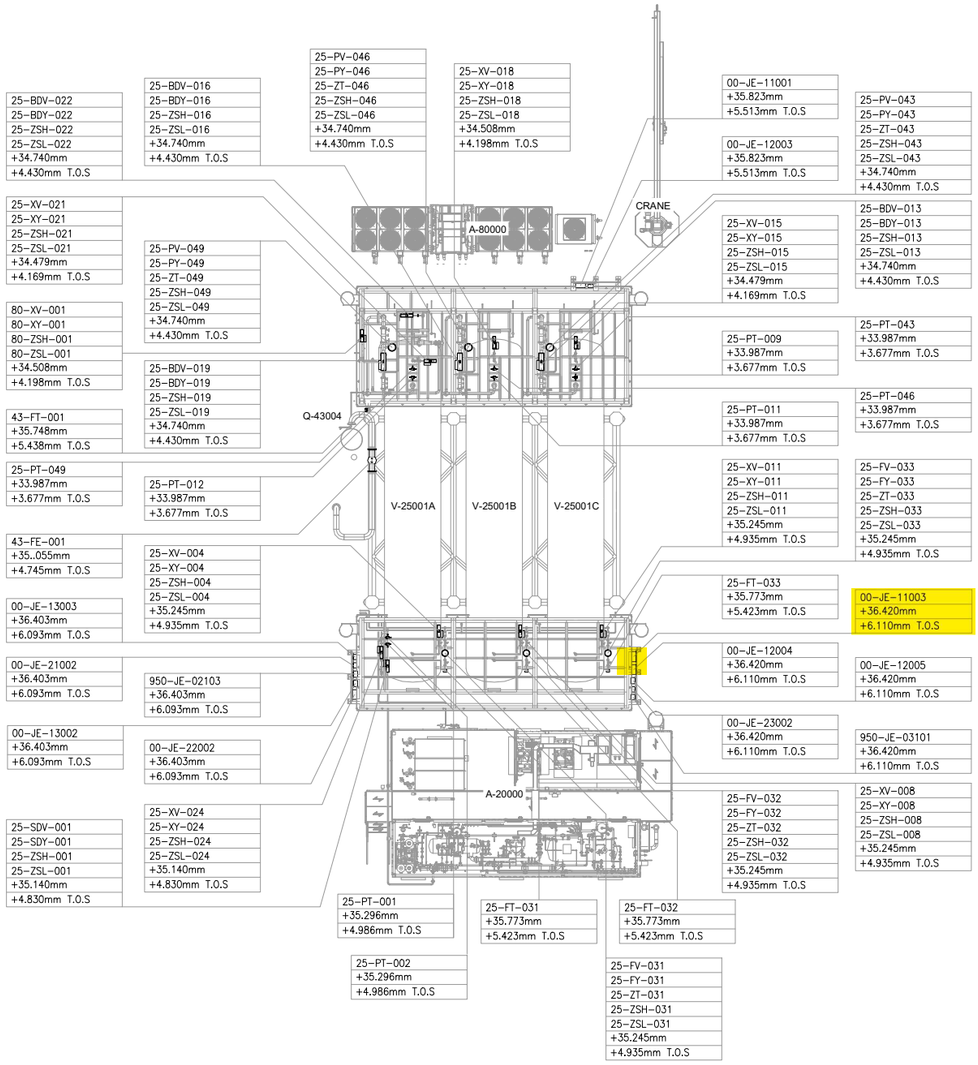
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INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

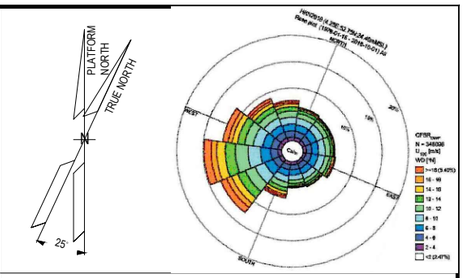
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



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123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)	
INSTRUMENTS	JUNCTION BOX 00-JE-11003	No.	MARSHALLING CABINET B400-PCS-002	

<01>

VALVE POSITIONER	25-FY-038	IN +/-	C-25-FY-038/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
VALVE POSITIONER	25-FY-036	IN +/-	C-25-FY-036/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
VALVE POSITIONER	25-FY-034	IN +/-	C-25-FY-034/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
VALVE POSITIONER	25-ZT-031	OUT +/-	C-25-ZT-031/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
VALVE POSITIONER	25-ZT-032	OUT +/-	C-25-ZT-032/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
VALVE POSITIONER	25-ZT-033	OUT +/-	C-25-ZT-033/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
VALVE POSITIONER	25-ZT-034	OUT +/-	C-25-ZT-034/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
VALVE POSITIONER	25-ZT-036	OUT +/-	C-25-ZT-036/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
VALVE POSITIONER	25-ZT-038	OUT +/-	C-25-ZT-038/00-JE-11003 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2
	25-PT-001	+/-	C-25-PT-001/00-JE-11003 ~~C-25-PT-001/00-JE-11002~~ 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS	NOTE-2

TB-1/2

25	WH/BK	PR1
26		
SH		
27	WH/BK	PR2
28		
SH		
29	WH/BK	PR3
30		
SH		
31	WH/BK	PR4
32		
SH		
33	WH/BK	PR5
34		
SH		
35	WH/BK	PR6
36		
SH		
37	WH/BK	PR7
38		
SH		
39	WH/BK	PR8
40		
SH		
41	WH/BK	PR9
42		
SH		
43	WH/BK	PR10
44		
SH		
SPARE 45	WH/BK	PR11
46		
SH		
SPARE 47	WH/BK	PR12
48		
SH		
OS		

00-JE-11003_2/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-11003

PR1	25	WH/BK	25-FY-038
Shield Bar	26		
PR2	27	WH/BK	25-FY-036
Shield Bar	28		
PR3	29	WH/BK	25-FY-034
Shield Bar	30		
PR4	31	WH/BK	25-ZT-031
Shield Bar	32		
PR5	33	WH/BK	25-ZT-032
Shield Bar	34		
PR6	35	WH/BK	25-ZT-033
Shield Bar	36		
PR7	37	WH/BK	25-ZT-034
Shield Bar	38		
PR8	39	WH/BK	25-ZT-036
Shield Bar	40		
PR9	41	WH/BK	25-ZT-038
Shield Bar	42		
PR10	43	WH/BK	25-PT-001
Shield Bar	44		
PR11	45	WH/BK	SPARE
Shield Bar	46		
PR12	47	WH/BK	SPARE
Shield Bar	48		

Shield Bar — I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11003–SH.2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

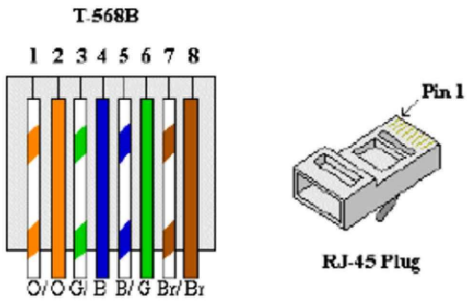
A3	DRAWING NO. 123–A90–DDL–IN–40015	SHEET 008	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

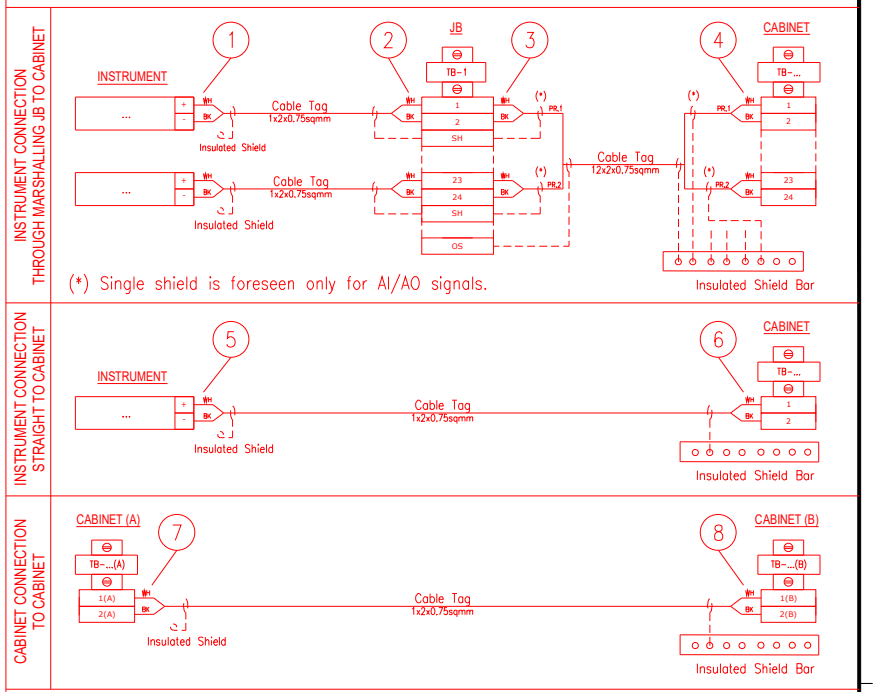


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

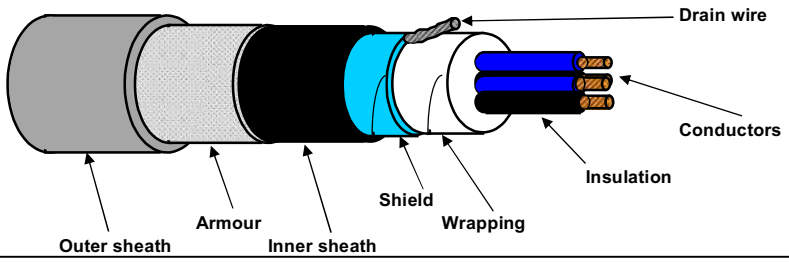
File Name : - 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-FY-038/00-JE-11003	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-FY-038	E/P Positioner	Upper Deck		00-JE-11003	AIAO JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-18 / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-25-ZT-038/00-JE-11003	: POSITION TRANSMITTER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000047	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	25-ZT-038	To	00-JE-11003		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		0,8	Ω
	SCREEN		0,8	Ω
	EARTH		NA	Ω
	ARMr		0,8	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

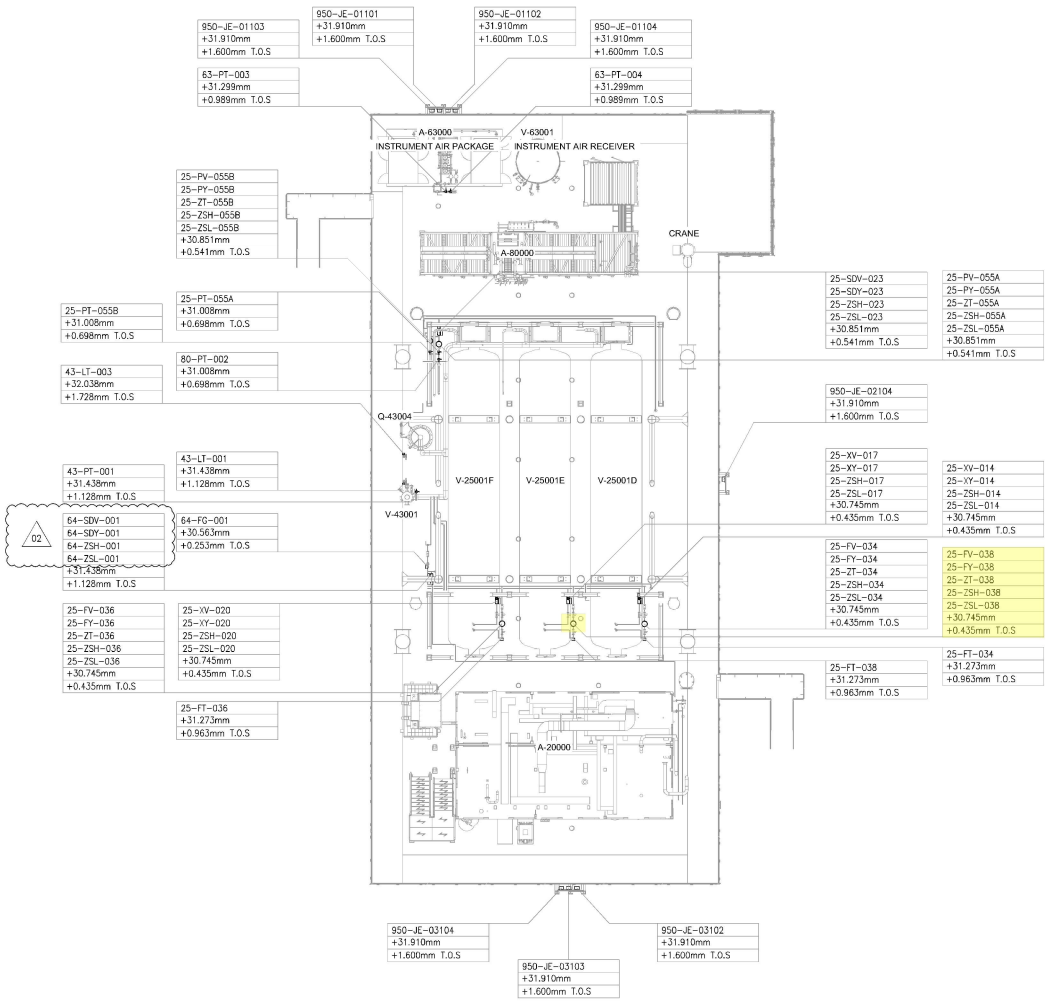
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-23	2025-01-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-23T15:34:22.531Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-25T10:22:16.274Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

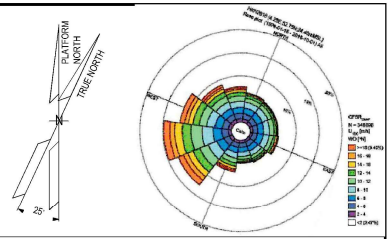
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

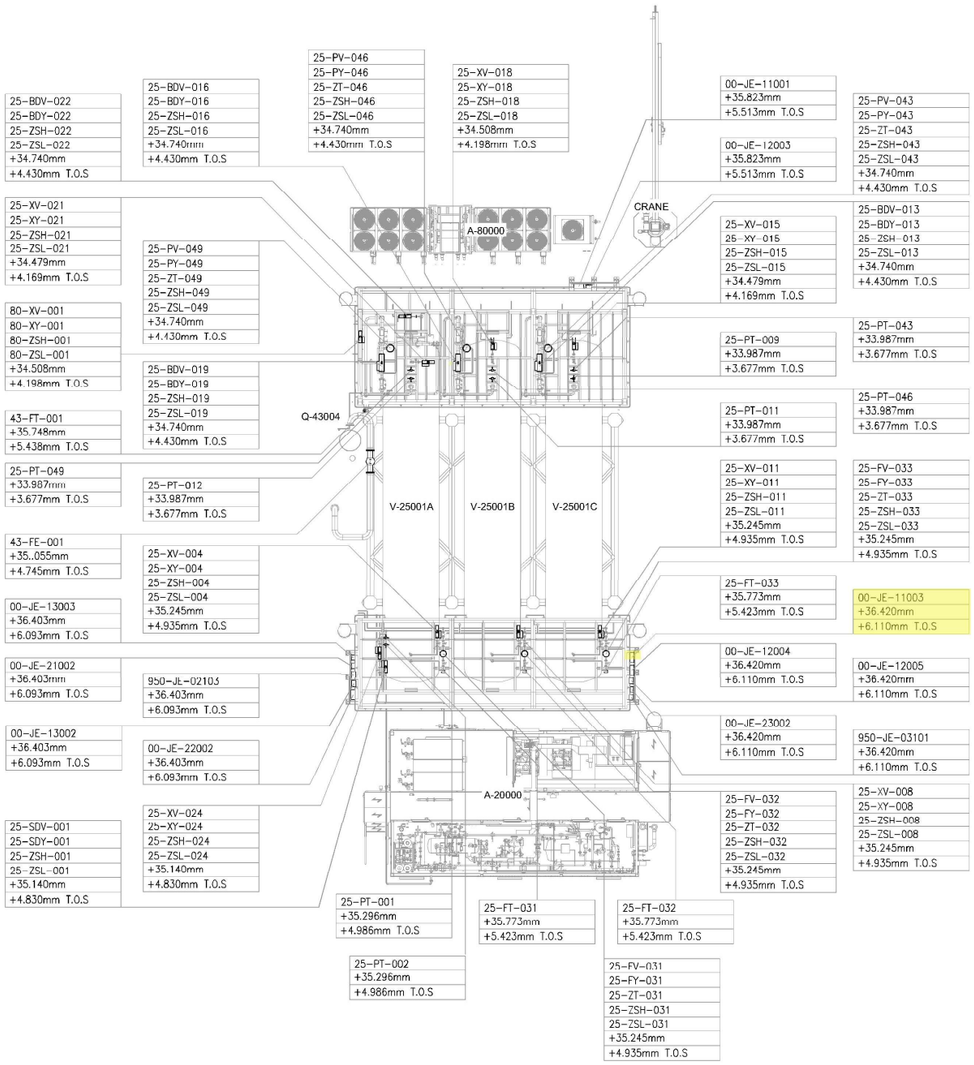
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

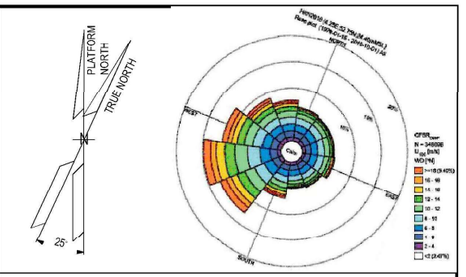
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
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00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

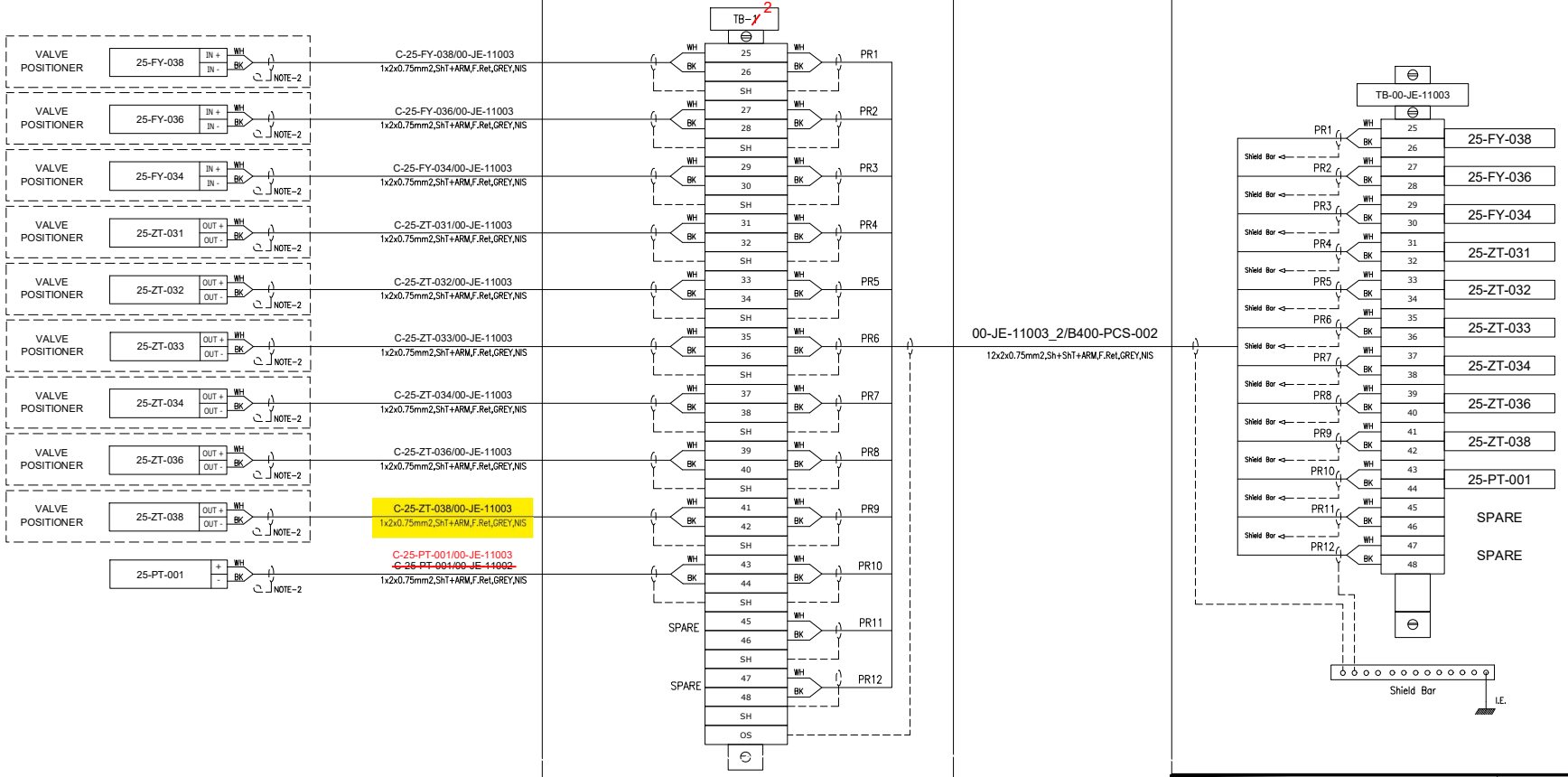
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:150	
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11003	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–11003–SH.2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

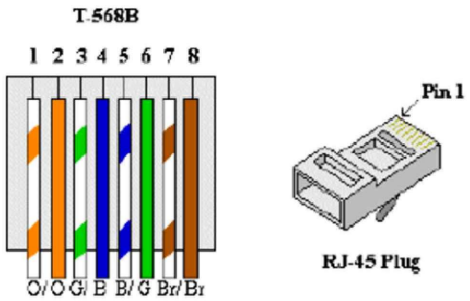
A3	DRAWING NO. 123–A90–DDL–IN–40015	SHEET 008	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

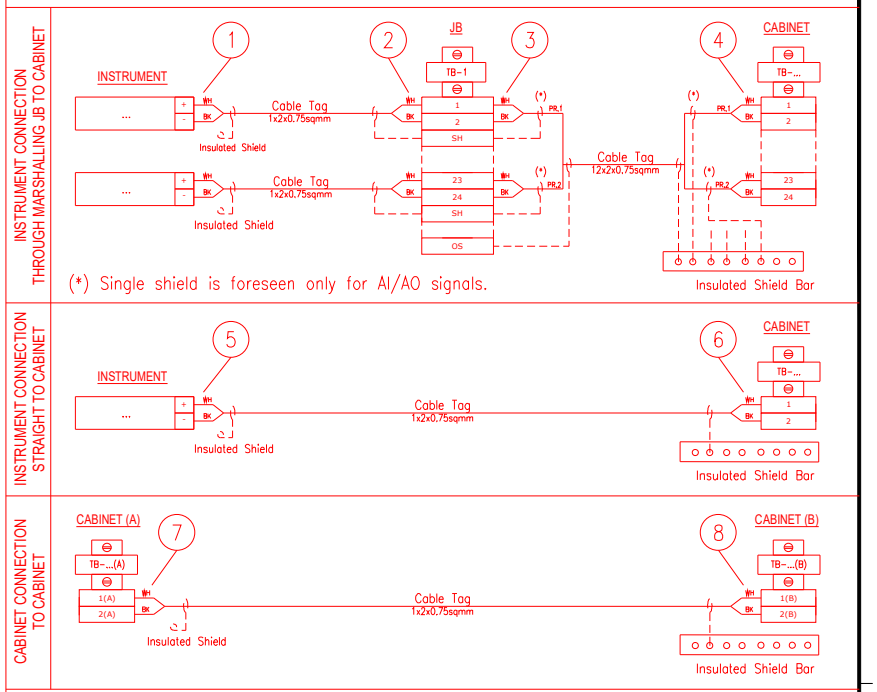


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

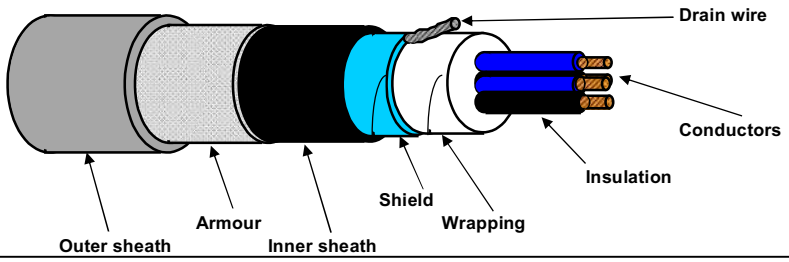
File Name : - 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-ZT-038/00-JE-11003	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-ZT-038	Position Transmitter	Upper Deck		00-JE-11003	AIAO JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-18 / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | CROSSWIND

ITEM	Tag	C-25-ZSL-046/00-JE-12001	: PROXIMITY SWITCH / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000067	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	25-ZSL-046	To	00-JE-12001		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999 >999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		2,02	Ω
	SCREEN		2,02	Ω
	EARTH		NA	Ω
	ARMr		2,02	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

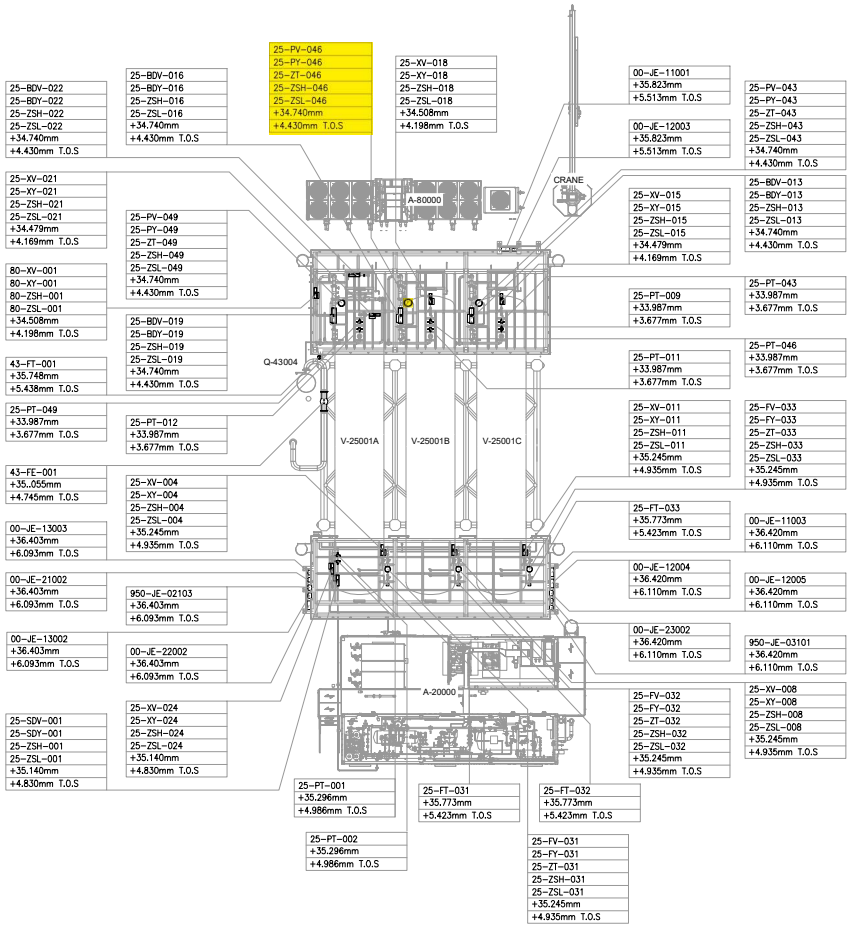
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 4: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-07	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-07T14:39:52.842Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T15:31:23.004Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

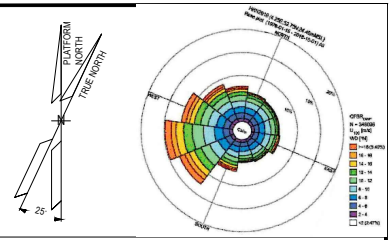
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

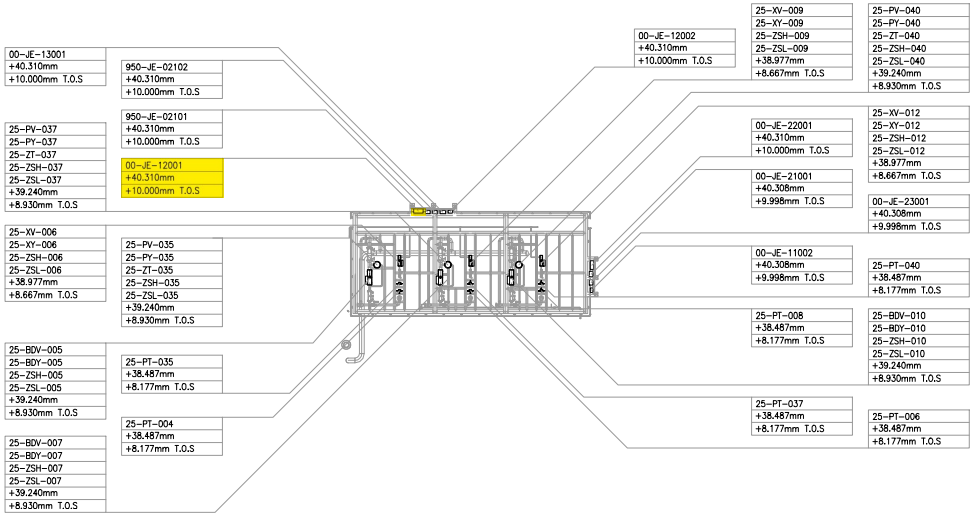
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

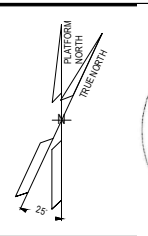
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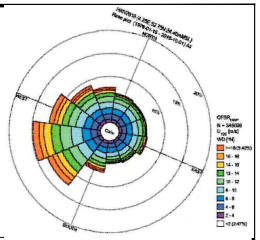
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK
SCALE: 1:100

VIEW EL. 36500mm to 47060mm





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12001	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 25-ZSL-021 (1, 2) WH BK PR1
- 25-ZSH-021 (5, 6) WH BK PR2
- NOTE-2
- C-25-XV-021/00-JE-12001 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-046 (2, 3) WH BK — NOTE-2 — C-25-ZSL-046/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS
- 25-ZSH-046 (5, 6) WH BK — NOTE-2 — C-25-ZSH-046/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-049 (2, 3) WH BK — NOTE-2 — C-25-ZSL-049/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS
- 25-ZSH-049 (5, 6) WH BK — NOTE-2 — C-25-ZSH-049/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-040 (2, 3) WH BK — NOTE-2 — C-25-ZSL-040/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS
- 25-ZSH-040 (5, 6) WH BK — NOTE-2 — C-25-ZSH-040/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-043 (2, 3) WH BK — NOTE-2 — C-25-ZSL-043/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS
- 25-ZSH-043 (5, 6) WH BK — NOTE-2 — C-25-ZSH-043/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

TB-2

WH BK	25	PR1
	26	
	SH	
WH BK	27	PR2
	28	
	SH	
WH BK	29	PR3
	30	
	SH	
WH BK	31	PR4
	32	
	SH	
WH BK	33	PR5
	34	
	SH	
WH BK	35	PR6
	36	
	SH	
WH BK	37	PR7
	38	
	SH	
WH BK	39	PR8
	40	
	SH	
WH BK	41	PR9
	42	
	SH	
WH BK	43	PR10
	44	
	SH	
SPARE	45	PR11
	46	
	SH	
SPARE	47	PR12
	48	
	SH	
	OS	

00-JE-12001_2/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12001

PR1 WH BK	25	25-ZSL-021
Shield Bar PR2 WH BK	26	
	27	25-ZSH-021
Shield Bar PR3 WH BK	28	
	29	25-ZSL-046
Shield Bar PR4 WH BK	30	
	31	25-ZSH-046
Shield Bar PR5 WH BK	32	
	33	25-ZSL-049
Shield Bar PR6 WH BK	34	
	35	25-ZSH-049
Shield Bar PR7 WH BK	36	
	37	25-ZSL-040
Shield Bar PR8 WH BK	38	
	39	25-ZSH-040
Shield Bar PR9 WH BK	40	
	41	25-ZSL-043
Shield Bar PR10 WH BK	42	
	43	25-ZSH-043
Shield Bar PR11 WH BK	44	
	45	SPARE
Shield Bar PR12 WH BK	46	
	47	SPARE
	48	

Shield Bar — I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-12001-SH.2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

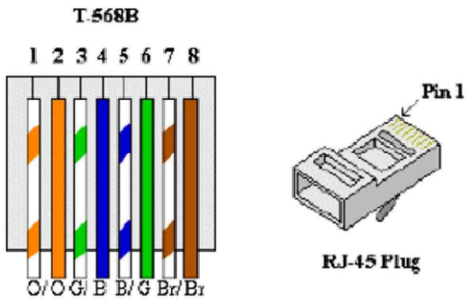
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 016	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

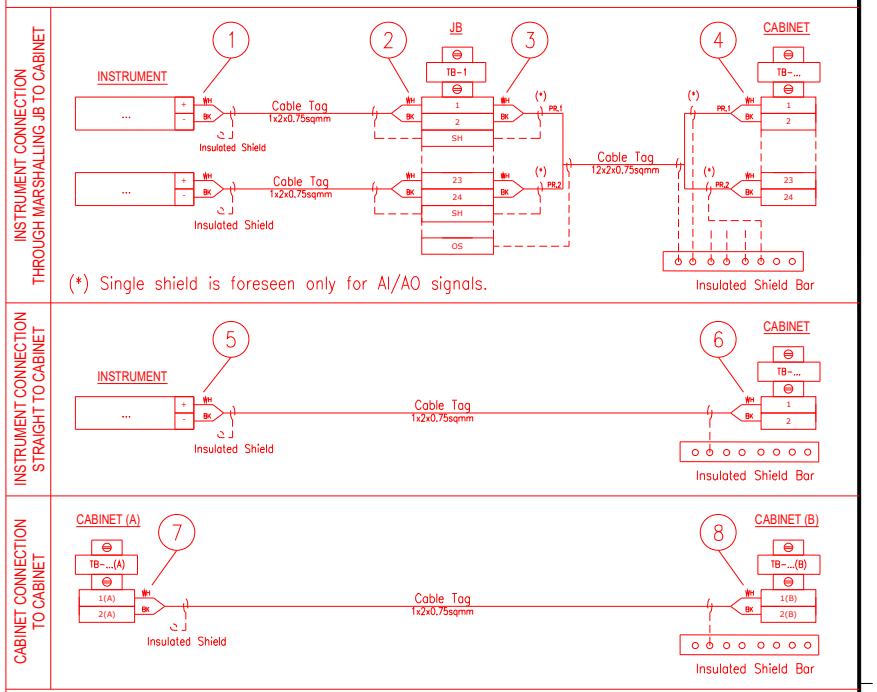


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

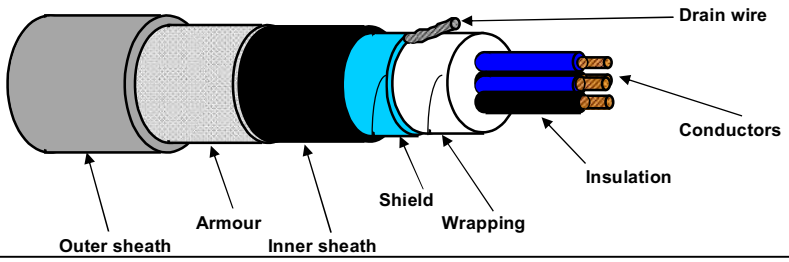
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-ZSL-046/00-JE-12001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-ZSL-046	Proximity Switch	Upper Deck		00-JE-12001	DI JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-10 / U-SEC-2C / U-SEC-2B

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | CROSSWIND

ITEM	Tag	C-25-ZSH-046/00-JE-12001	: PROXIMITY SWITCH / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000068	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	25-ZSH-046	To	00-JE-12001		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		2,03	Ω
	SCREEN		2,03	Ω
	EARTH		NA	Ω
	ARMr		2,03	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

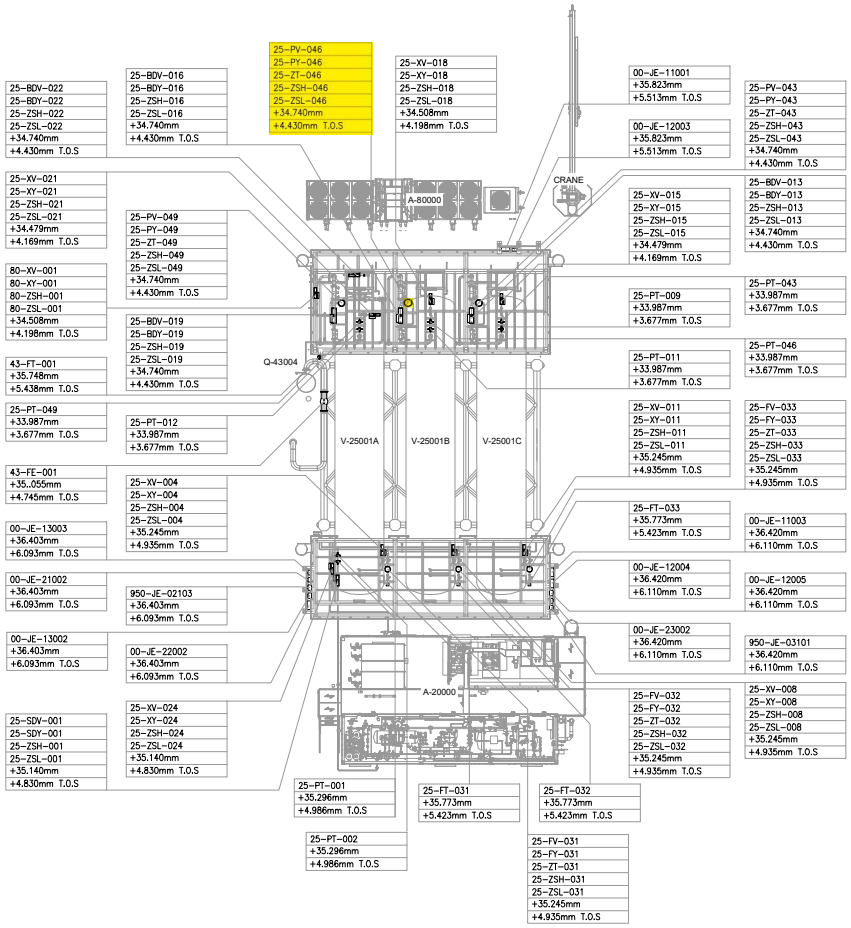
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-07	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-07T14:40:05.276Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T15:32:40.737Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

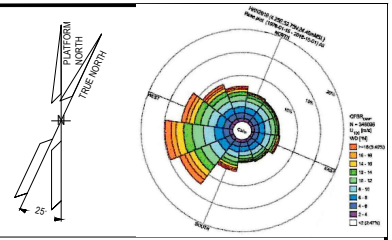
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

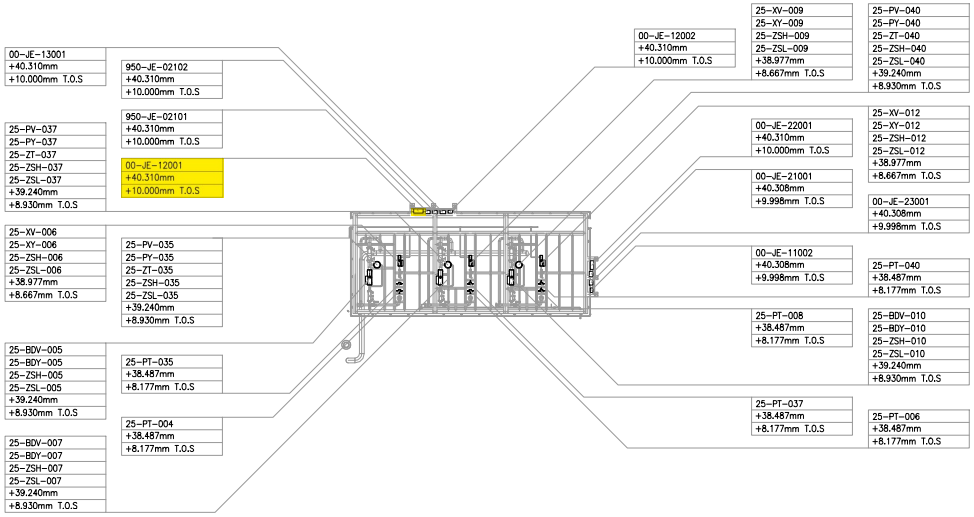
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

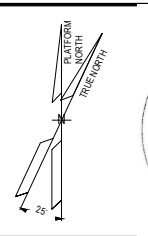
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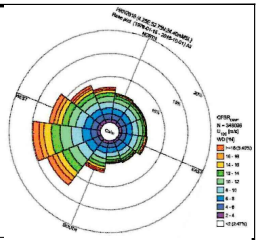
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK
SCALE: 1:100

VIEW EL. 36500mm to 47060mm





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12001	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 25-ZSL-021 (1, 2) WH BK → PR1
- 25-ZSH-021 (5, 6) WH BK → PR2
- NOTE-2
- C-25-XV-021/00-JE-12001 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-046 (2, 3) WH BK → NOTE-2 — C-25-ZSL-046/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS
- 25-ZSH-046 (5, 6) WH BK → NOTE-2 — C-25-ZSH-046/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-049 (2, 3) WH BK → NOTE-2 — C-25-ZSL-049/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS
- 25-ZSH-049 (5, 6) WH BK → NOTE-2 — C-25-ZSH-049/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-040 (2, 3) WH BK → NOTE-2 — C-25-ZSL-040/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS
- 25-ZSH-040 (5, 6) WH BK → NOTE-2 — C-25-ZSH-040/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

CONTROL VALVE LIMIT SWITCHES BOX (EISENBAU)
- 25-ZSL-043 (2, 3) WH BK → NOTE-2 — C-25-ZSL-043/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS
- 25-ZSH-043 (5, 6) WH BK → NOTE-2 — C-25-ZSH-043/00-JE-12001 1x2x0.75mm2,ShT+ARM,F.Ret,GREY,NIS

TB-2

WH BK	25	PR1
	26	
	SH	
WH BK	27	PR2
	28	
	SH	
WH BK	29	PR3
	30	
	SH	
WH BK	31	PR4
	32	
	SH	
WH BK	33	PR5
	34	
	SH	
WH BK	35	PR6
	36	
	SH	
WH BK	37	PR7
	38	
	SH	
WH BK	39	PR8
	40	
	SH	
WH BK	41	PR9
	42	
	SH	
WH BK	43	PR10
	44	
	SH	
SPARE	45	PR11
	46	
	SH	
SPARE	47	PR12
	48	
	SH	
	OS	

00-JE-12001_2/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12001

PR1 WH BK	25	25-ZSL-021
Shield Bar	26	
PR2 WH BK	27	25-ZSH-021
Shield Bar	28	
PR3 WH BK	29	25-ZSL-046
Shield Bar	30	
PR4 WH BK	31	25-ZSH-046
Shield Bar	32	
PR5 WH BK	33	25-ZSL-049
Shield Bar	34	
PR6 WH BK	35	25-ZSH-049
Shield Bar	36	
PR7 WH BK	37	25-ZSL-040
Shield Bar	38	
PR8 WH BK	39	25-ZSH-040
Shield Bar	40	
PR9 WH BK	41	25-ZSL-043
Shield Bar	42	
PR10 WH BK	43	25-ZSH-043
Shield Bar	44	
PR11 WH BK	45	SPARE
Shield Bar	46	
PR12 WH BK	47	SPARE
Shield Bar	48	

Shield Bar — I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12001–SH.2 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

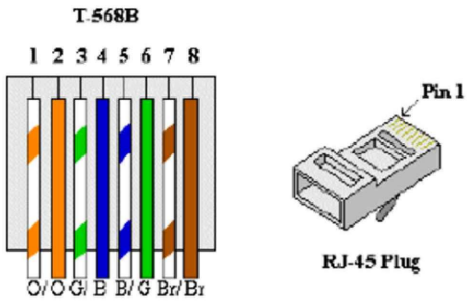
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File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

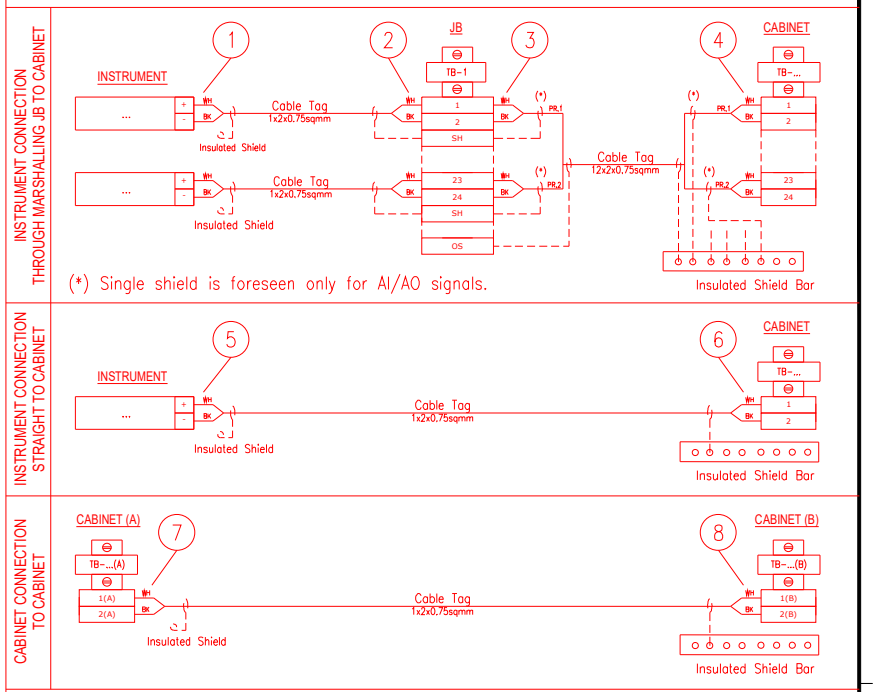


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

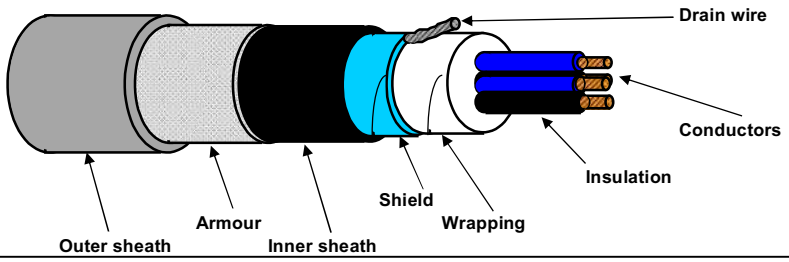
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-ZSH-046/00-JE-12001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-ZSH-046	Proximity Switch	Upper Deck		00-JE-12001	DI JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-10 / U-SEC-2C / U-SEC-2B

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

ROSETTI MARINO — PROVERLIS — CROSSWIND

ITEM	Tag	C-25-ZSL-038/00-JE-12005 : PROXIMITY SWITCH / MARSHALLING PCS			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05 : Hydrogen Storage Vessel E (V-25001E)			Module	UD	
TASK	code	C10000100	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH — Cores/Size mm²: 1X2X0,75 mm2 — Color: GREY

From: 25-ZSL-038 — To: 00-JE-12005

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,8	Ω
	SCREEN	0,8	Ω
	EARTH	NA	Ω
	ARMr	0,8	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

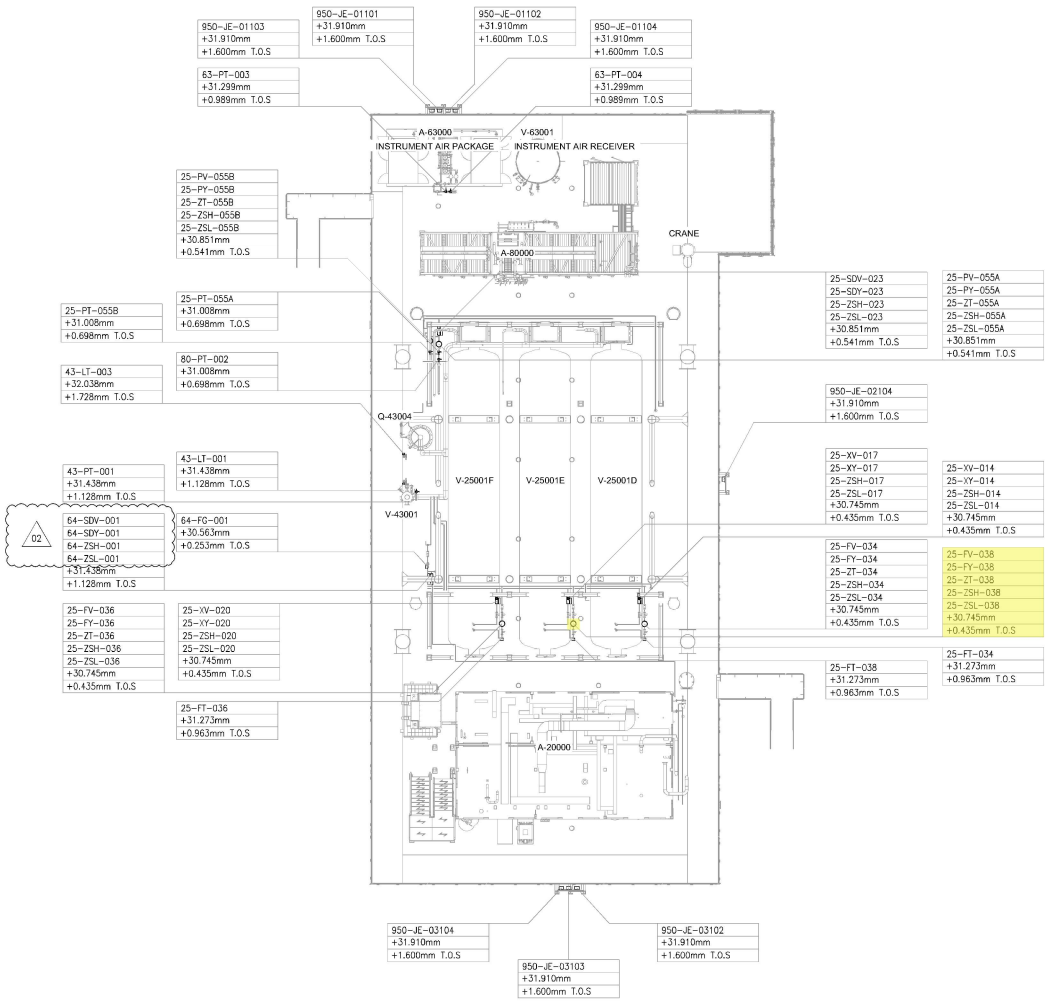
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 — Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-23	2025-01-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-23T15:36:02.860Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-25T10:25:36.195Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

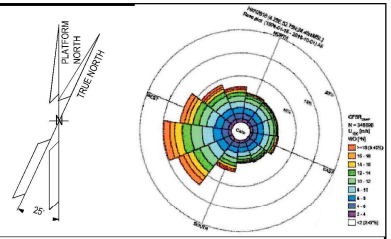
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

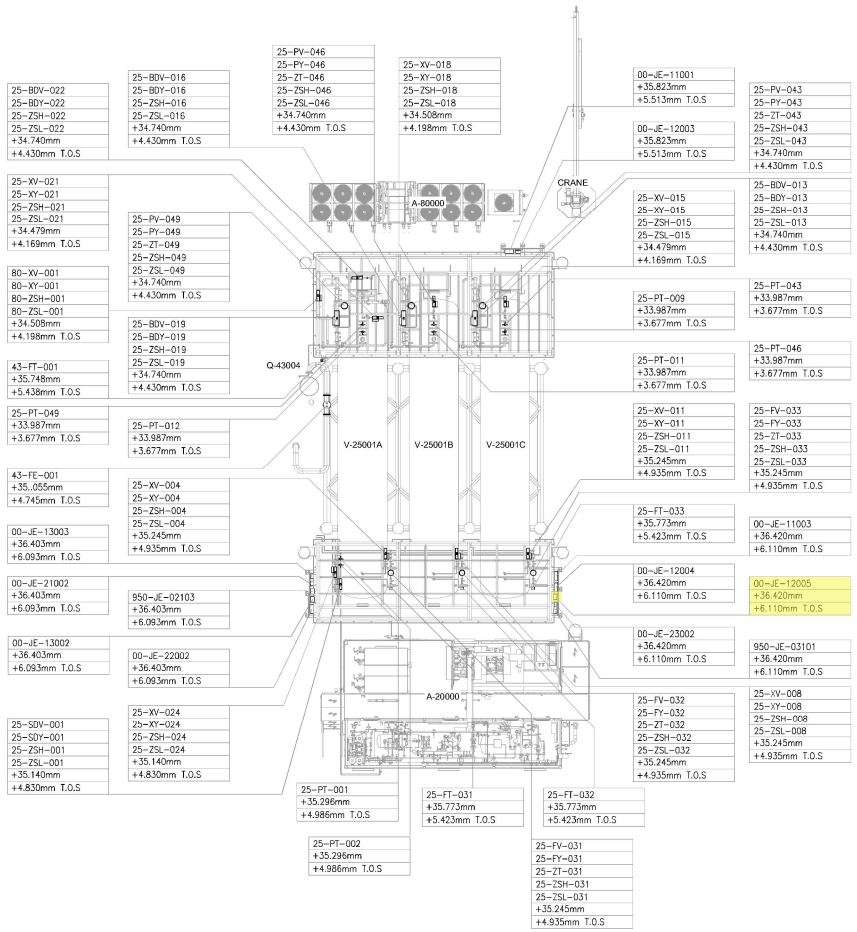
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081		SHEET 001 / REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

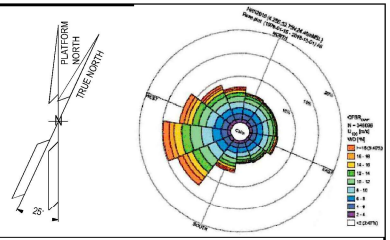
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

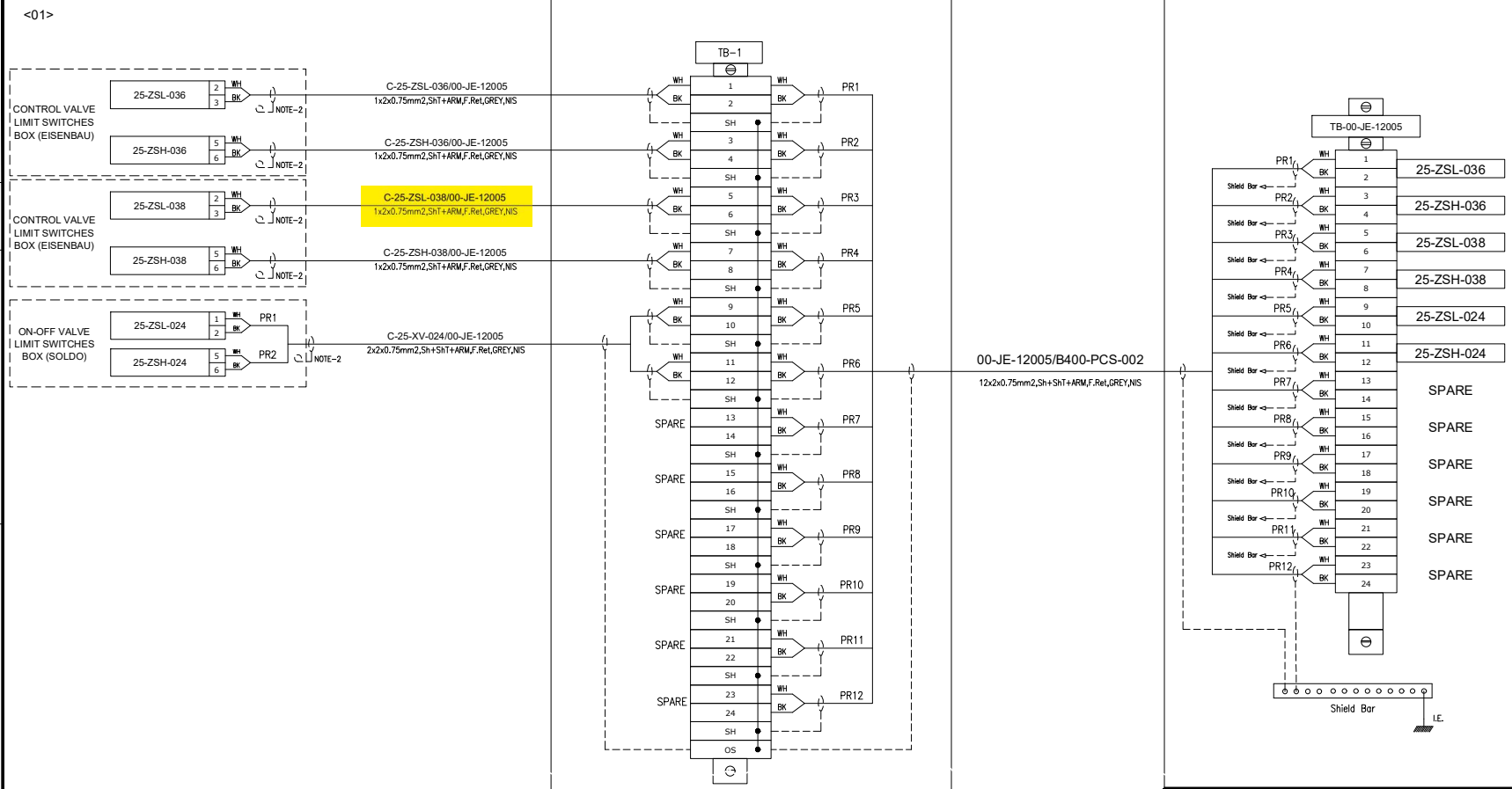
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12005	No.	MARSHALLING CABINET B400-PCS-002



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12005

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

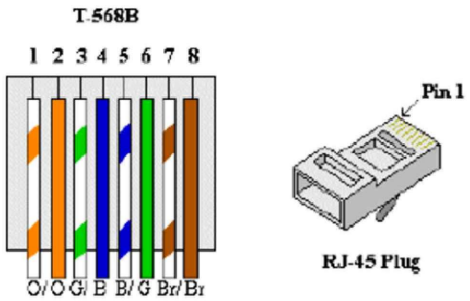
A3	DRAWING NO. 123A90–DDL–IN–DG–40015	SHEET 021	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
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   - 02- GREEN
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   - 04- YELLOW
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   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

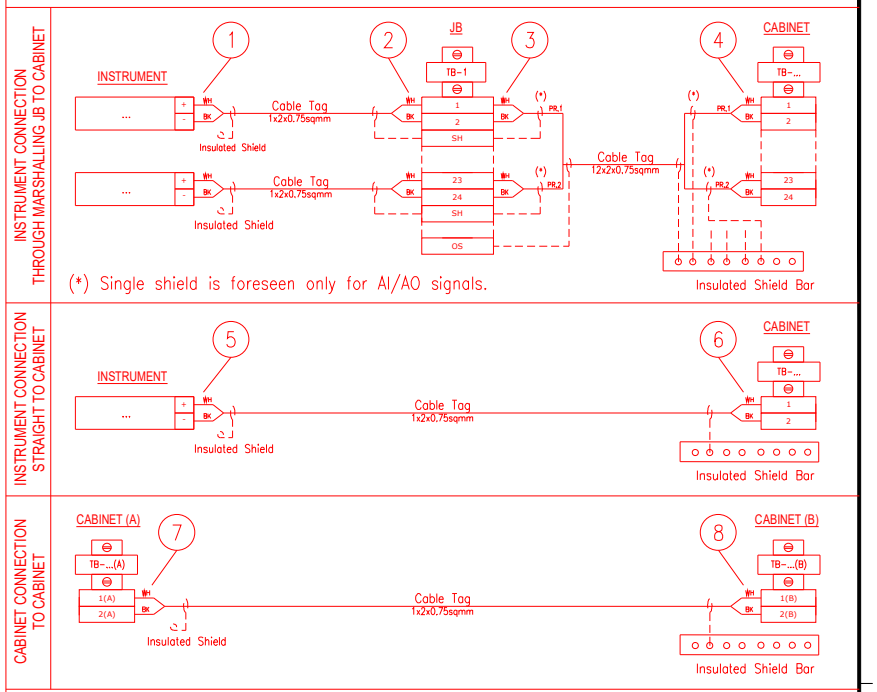


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
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5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

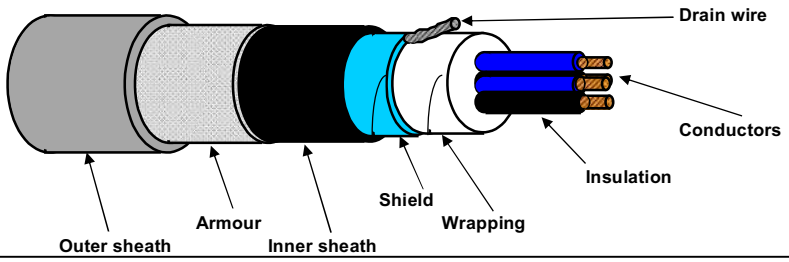
File Name : - 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-ZSL-038/00-JE-12005	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-ZSL-038	Proximity Switch	Upper Deck		00-JE-12005	DI JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-18 / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO — PROVERLIS — CROSSWIND

ITEM	Tag	C-25-ZSH-038/00-JE-12005 : PROXIMITY SWITCH / MARSHALLING PCS			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05 : Hydrogen Storage Vessel E (V-25001E)			Module	UD	
TASK	code	C10000101	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH — Cores/Size mm²: 1X2X0,75 mm2 — Color: GREY

From: 25-ZSH-038 — To: 00-JE-12005

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		0,8	Ω
	SCREEN		0,8	Ω
	EARTH		NA	Ω
	ARMr		0,8	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

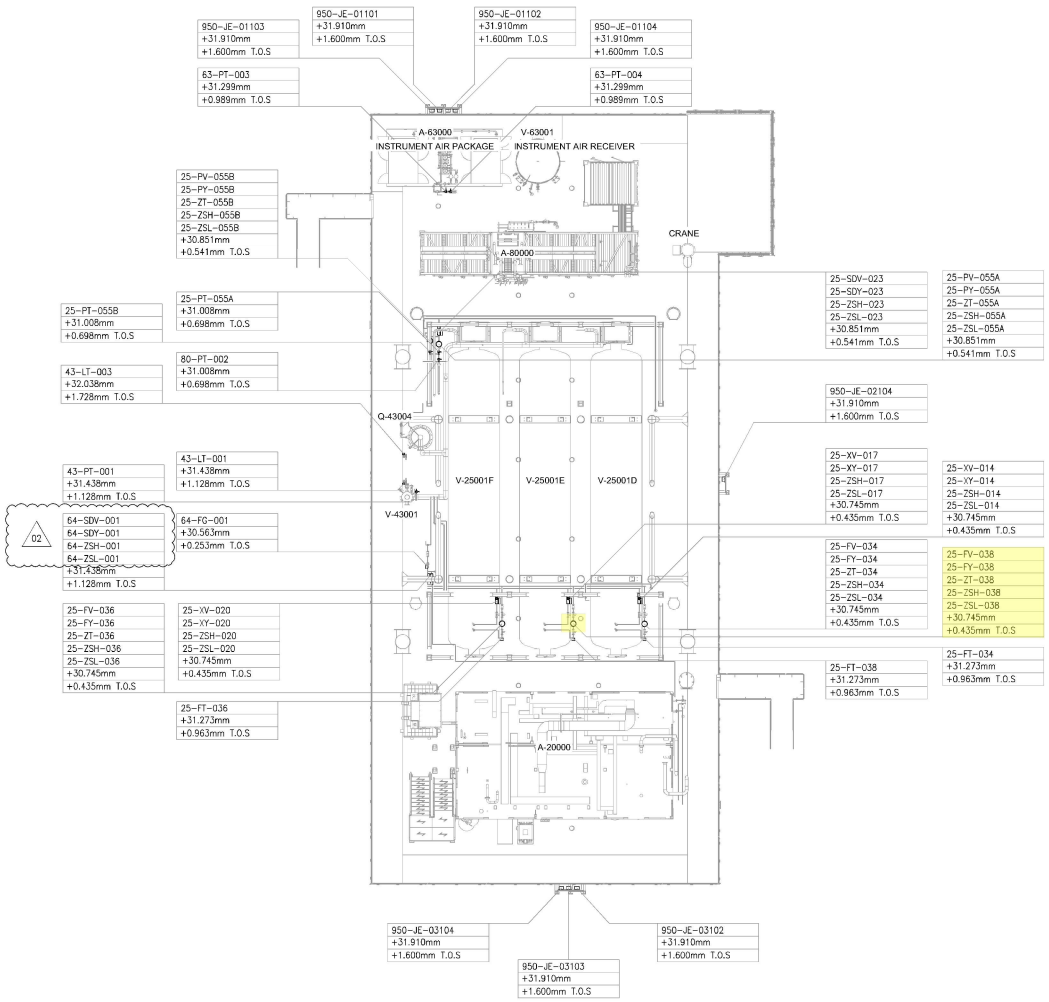
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 — Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-23	2025-01-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-23T15:36:17.879Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-25T10:25:51.842Z	

DRAWING NO. 123A90-DDL-IN-DL-40081

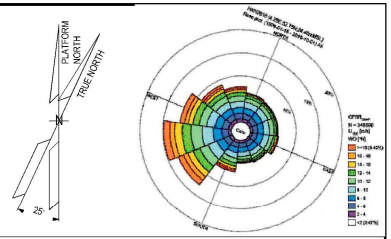
REV. 01



UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

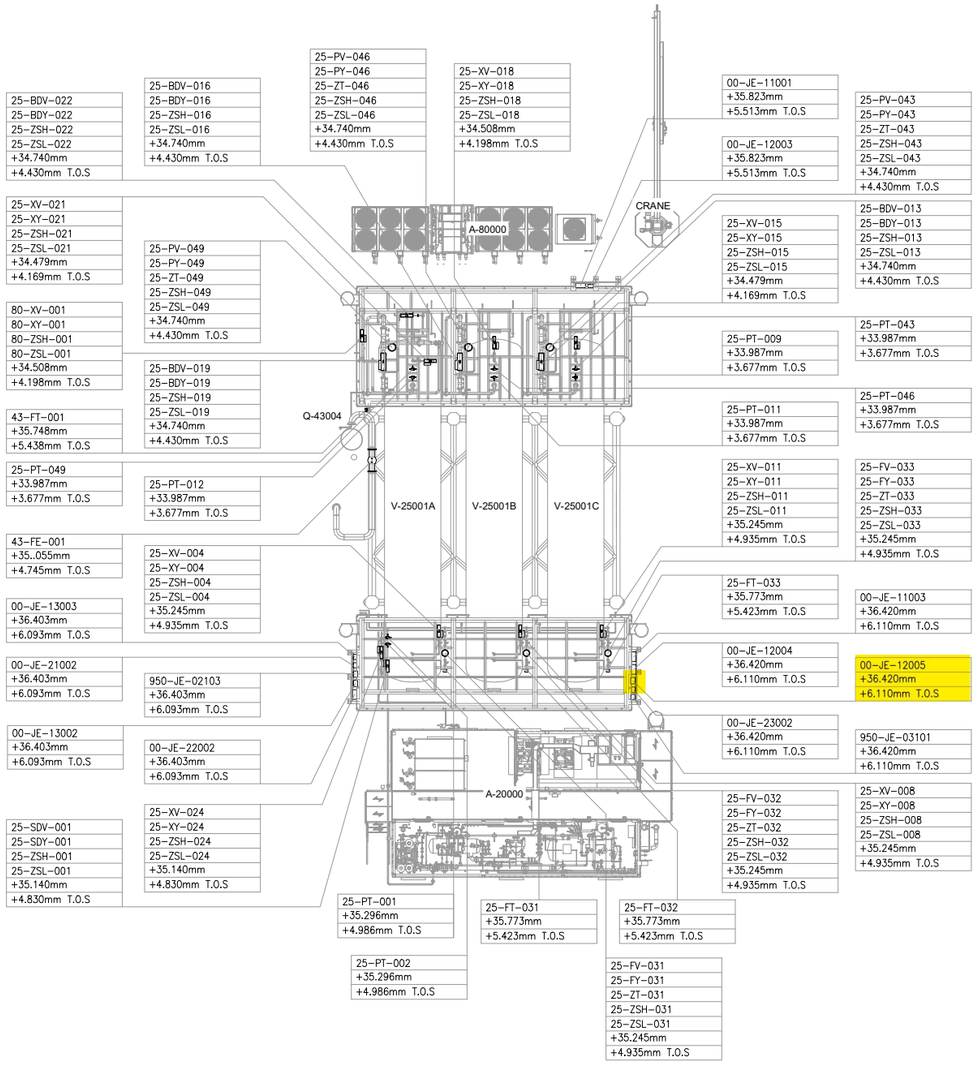
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

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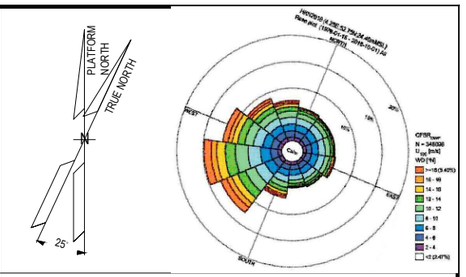
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

TITLE :

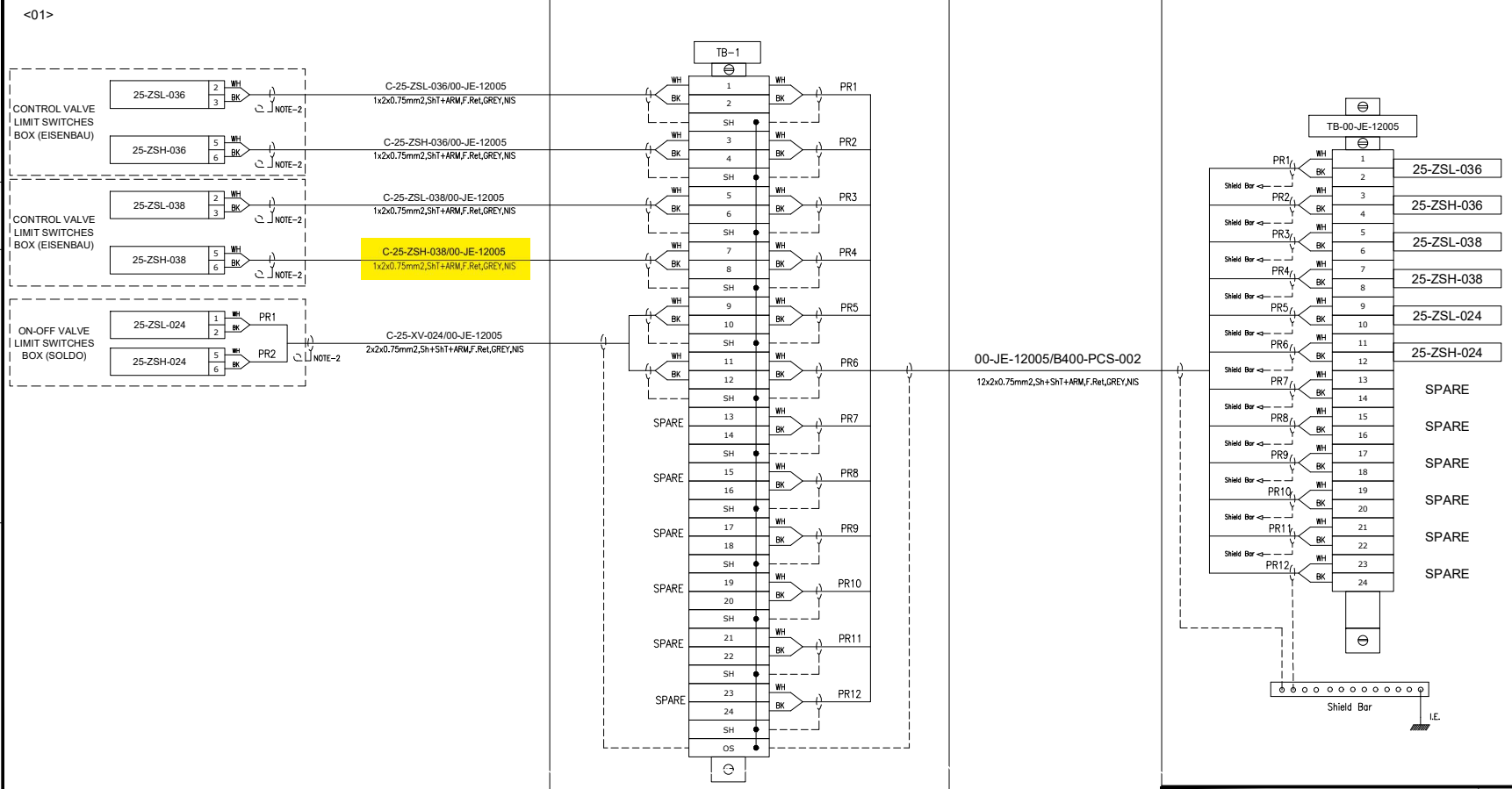
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40081	SHEET 002	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12005	No.	MARSHALLING CABINET B400-PCS-002



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12005

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

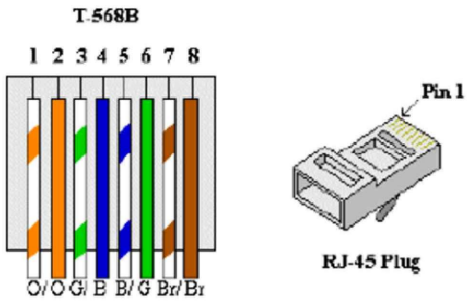
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	123A90–DDL–IN–DG–40015	021	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

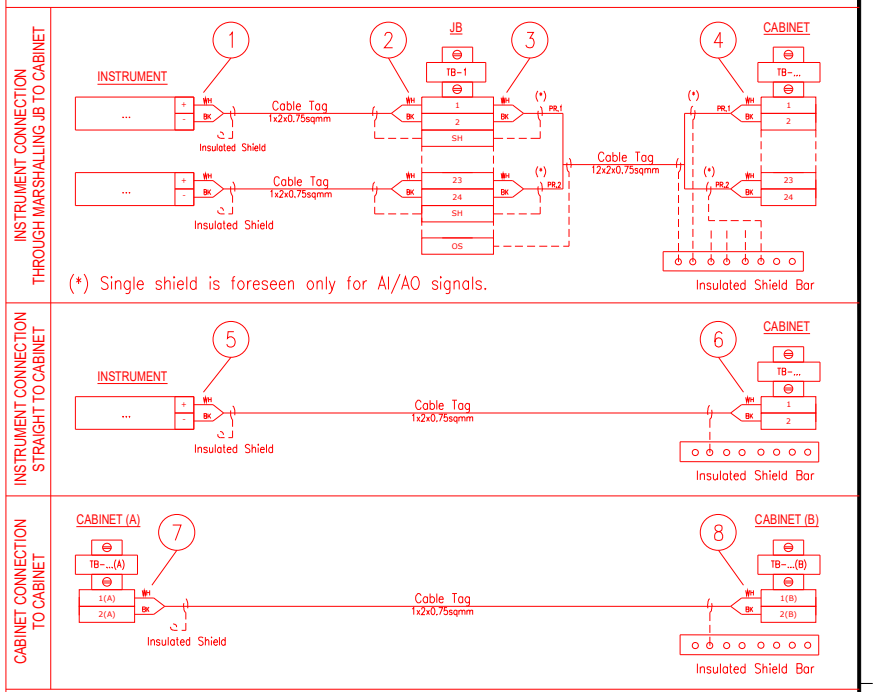


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_G	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

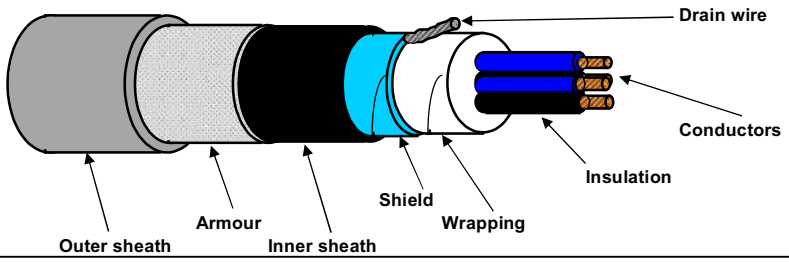
File Name : - 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-ZSH-038/00-JE-12005	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-ZSH-038	Proximity Switch	Upper Deck		00-JE-12005	DI JB to PCS	Upper Deck	Junction Box	SMICV01-1X2X0.75	Cable Cu CI.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-18 / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ITEM	Tag	C-25-PT-011/00-JE-21001	: PRESSURE TRANSMITTER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000134	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-MICA-XLPE-OS-LSZH-SWB-LSZH — Cores/Size mm²: 1X2X0,75 mm2 — Color: ORANGE

From: 25-PT-011 — To: 00-JE-21001

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	1,1	Ω
	SCREEN	1,1	Ω
	EARTH	NA	Ω
	ARMr	1,1	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

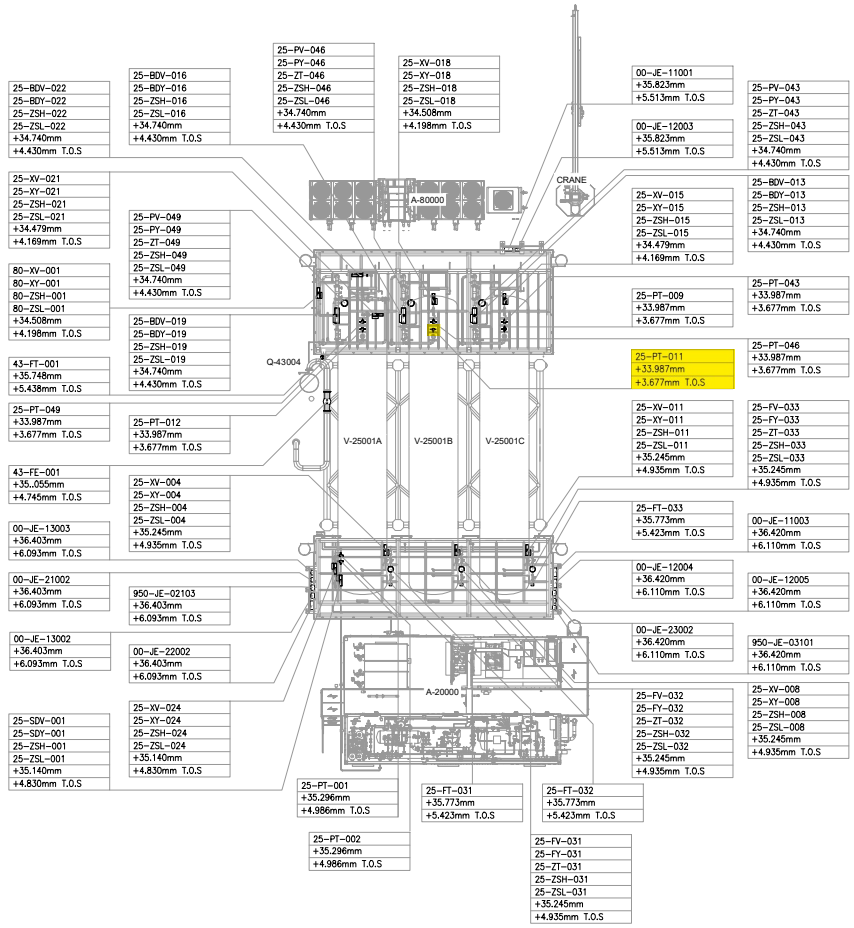
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 — Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-07	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-07T14:45:19.307Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-18T15:27:31.501Z	

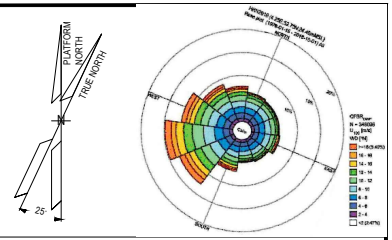
DRAWING NO. 123A90-DDL-IN-DL-40081 | REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

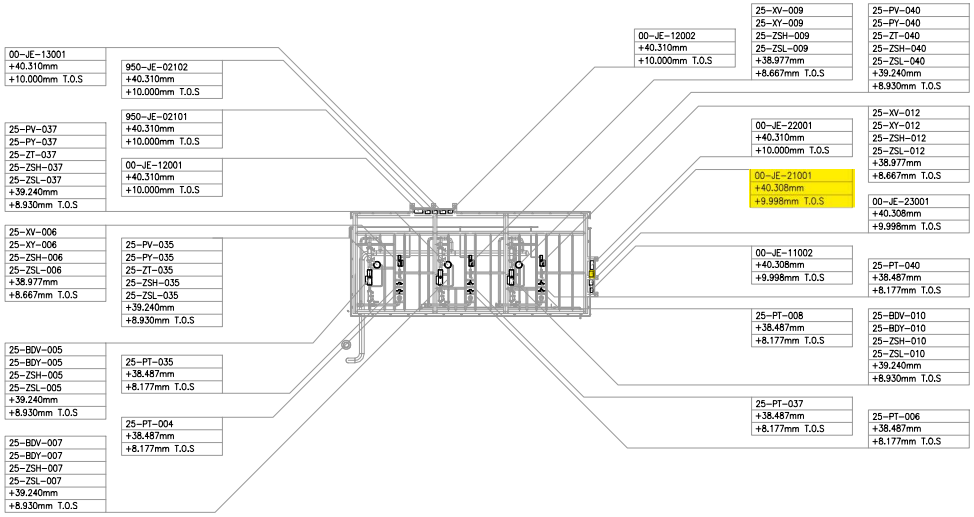
ROSETTI MARINO SpA

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

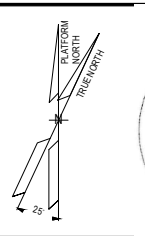
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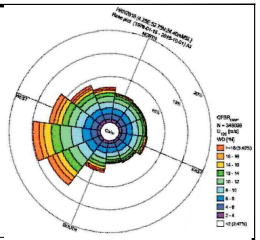
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK
SCALE: 1:100

VIEW EL. 36500mm to 47060mm





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

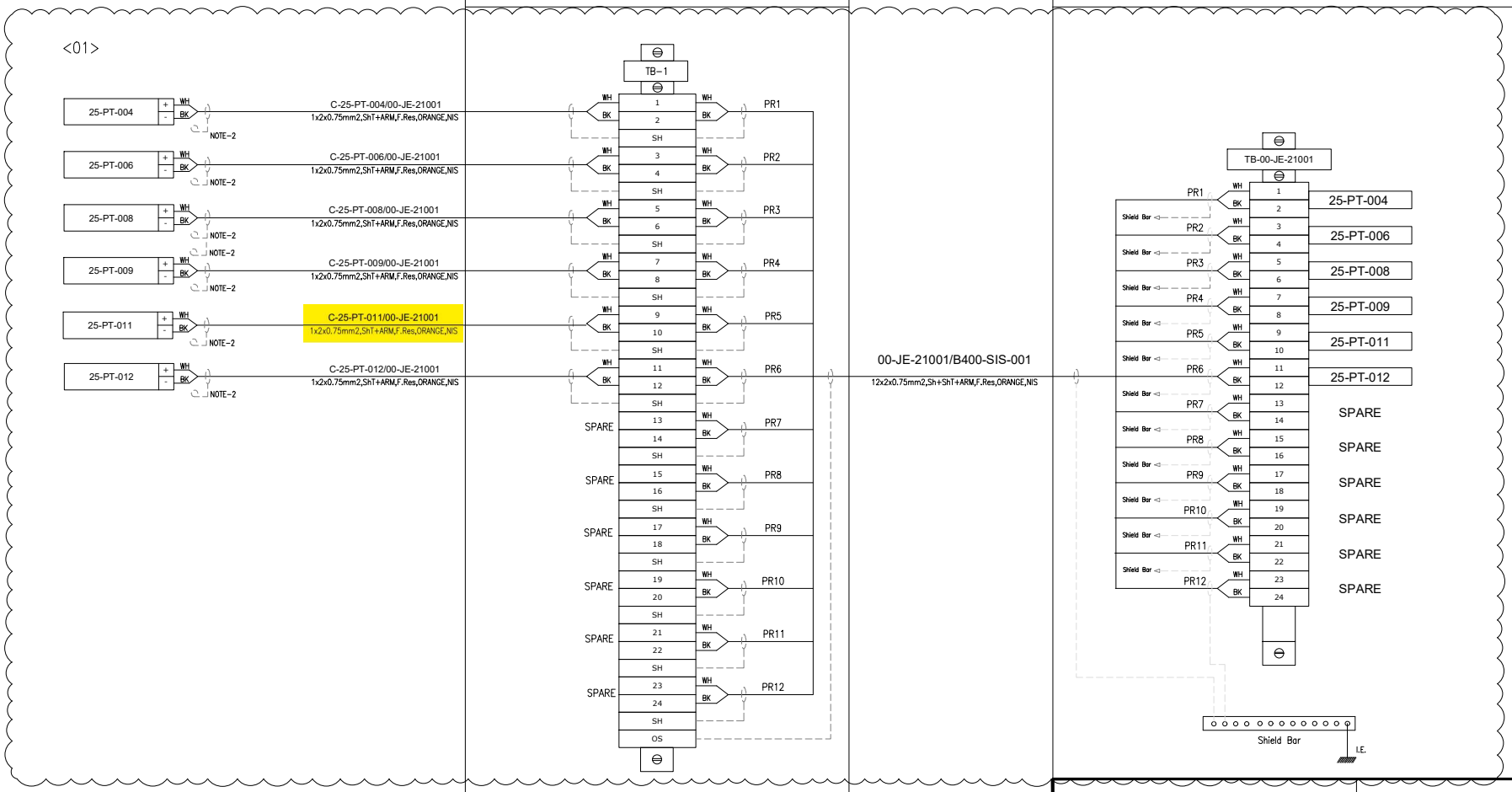
TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40016 REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-21001	No.	MARSHALLING CABINET B400-SIS-001



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT– SAFETY SYSTEM WIRING DIAGRAMS
00–JE–21001

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

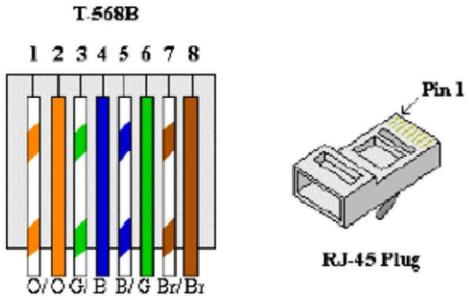
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 005	REV. 01

File Name : 123A90-DDL-IN-DG-40016_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 | REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

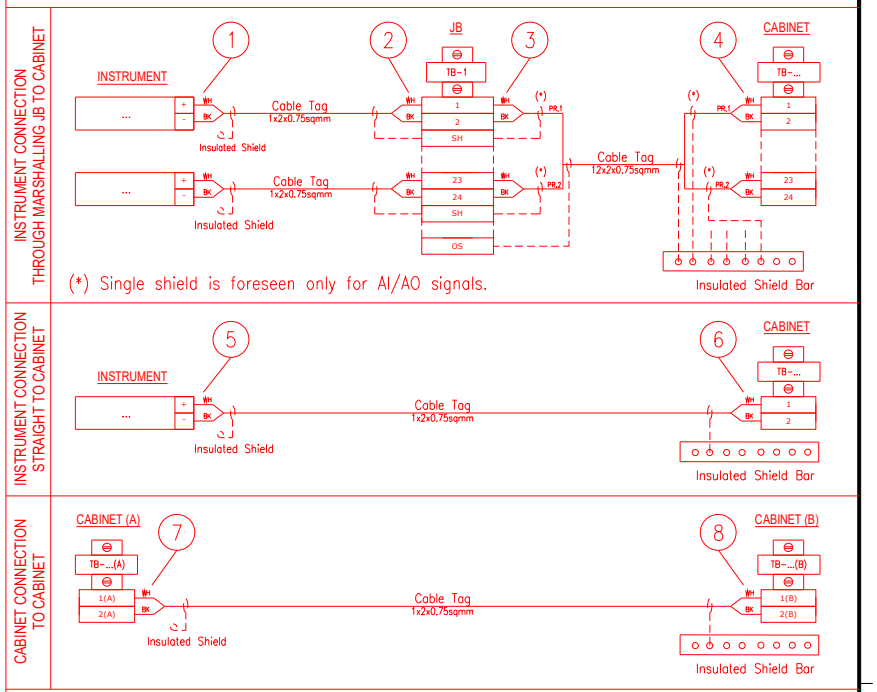


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

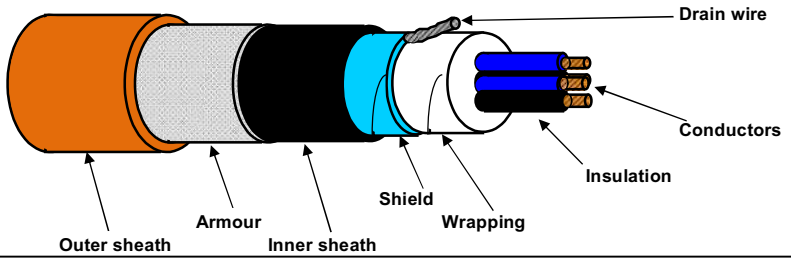
CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

File Name : - 123A90-DDL-IN-DG-40015_Rev.01

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Fire Resistant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	Mica/Glass Tape (MGT) plus XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	10/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,2 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - MGT/XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60331.21 -**	
(every 1000 mm)	**IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(8,5 ± 10%) mm	
Over armour diameter :	(9,3 ± 10%) mm	
Outer diameter :	(11,7 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Fire Resistant test :	**IEC 60331.21**	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

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The data provided in this catalog for low voltage cables are given with the sole purpose of the guide (Art. 1 of the Regulation (UE) 2016/679, also known as GDPR) and are not binding. FLEI reserves the right to modify the characteristics of the cables at any time. The information, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-PT-011/00-JE-21001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-PT-011	Pressure Transmitter	Upper Deck		00-JE-21001	AIAO JB to SIS	Upper Deck	Junction Box	SMICV08-1X2X0.75	Cable Cu CI:2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0.75mm² - Orange	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-10 / U-SEC-2C / U-SEC-2B / U-SEC-2A / U-SEC-1B / U-SEC-3

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-25-BDV-016/00-JE-22001 : PROXIMITY SWITCH / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	25-05 : Hydrogen Storage Vessel E (V-25001E)				Module	UD
TASK	code	C10000144		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10 — Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-MICA-XLPE-IS-OS-LSZH-SWB-LSZH	Cores/Size mm²	2X2X0,75 mm2	Color	ORANGE
From	25-BDV-016		To	00-JE-22001	

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	1,55	Ω
	SCREEN	1,55	Ω
	EARTH	NA	Ω
	ARMr	1,55	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

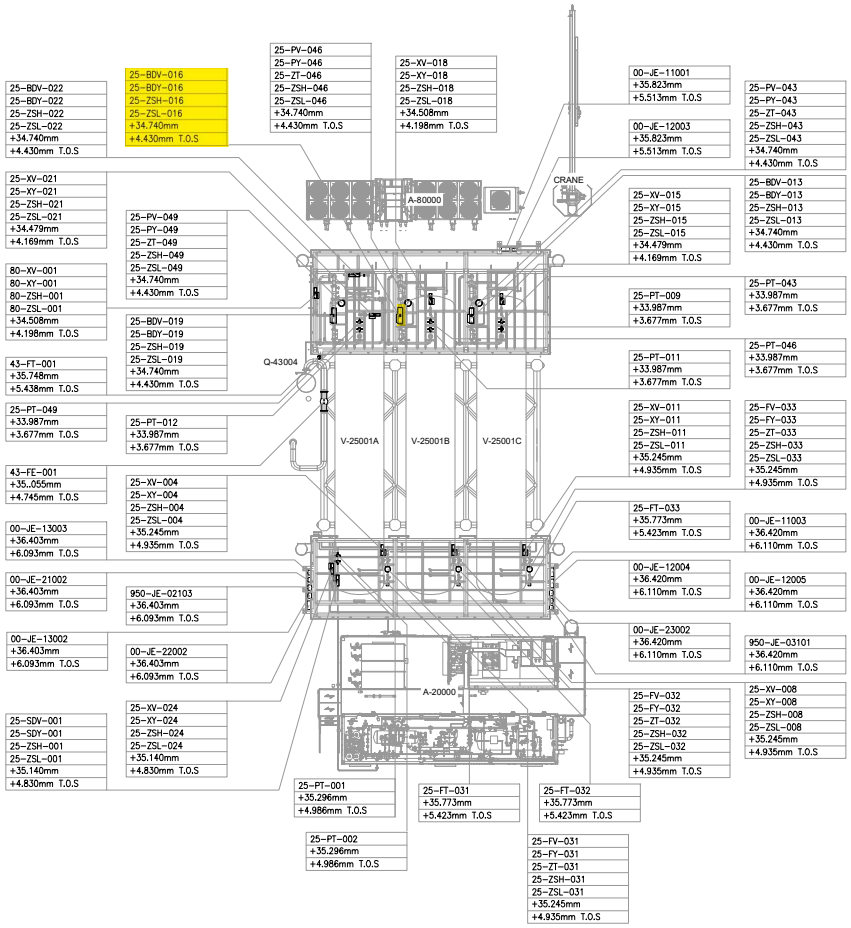
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-08	2025-02-18	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T08:09:52.937Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-18T14:04:51.120Z	

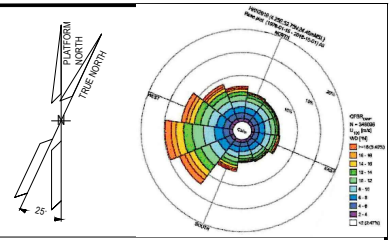
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: 123A90-FDL-IN-DL-40081

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

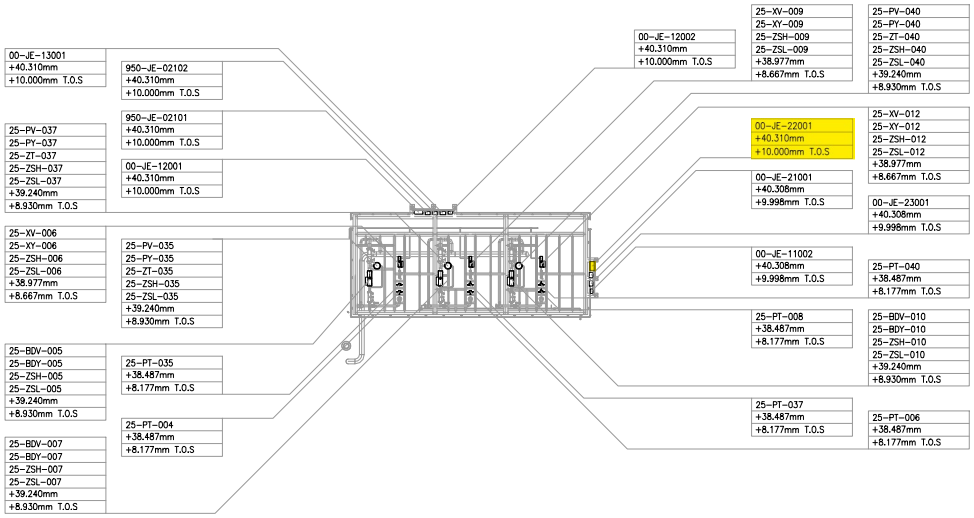
ROSETTI MARINO SpA

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

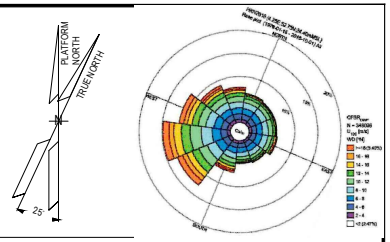
File Name : - 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK
SCALE: 1:100

VIEW EL. 36500mm to 47060mm



NOTES

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2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40016 REV. 01

FIELD

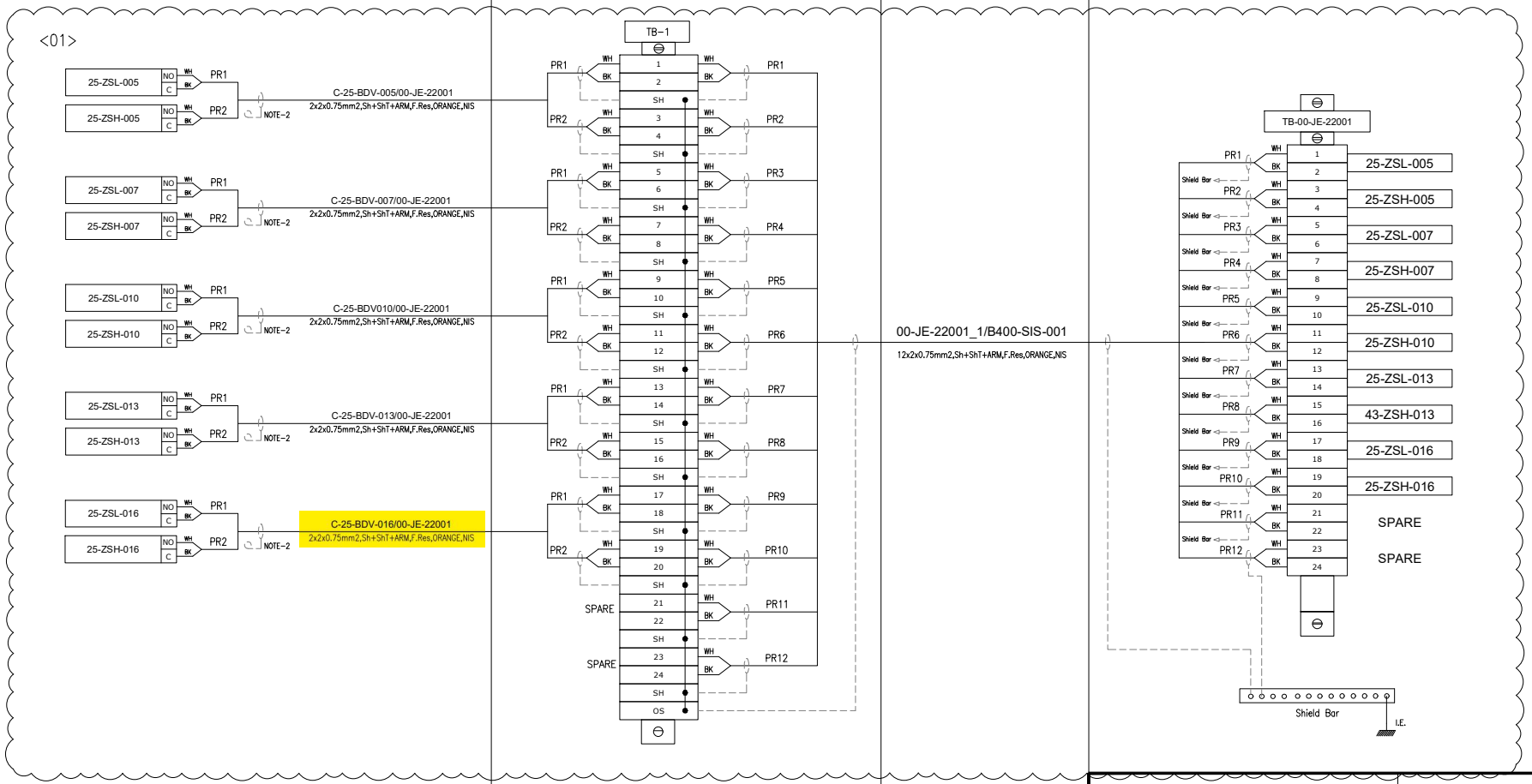
INSTRUMENTS

JUNCTION BOX
00-JE-22001

MULTICABLE
No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET
B400-SIS-001



CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT– SAFETY SYSTEM WIRING DIAGRAMS
00–JE–22001–SH.1 OF 2

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

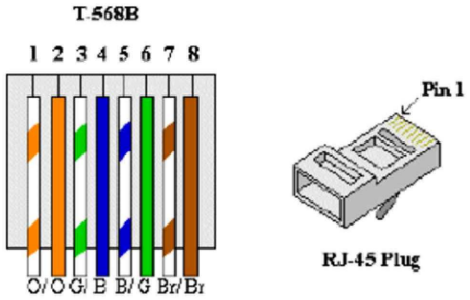
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 010	REV. 01

File Name : 123A90-DDL-IN-DG-40016_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015 | REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:

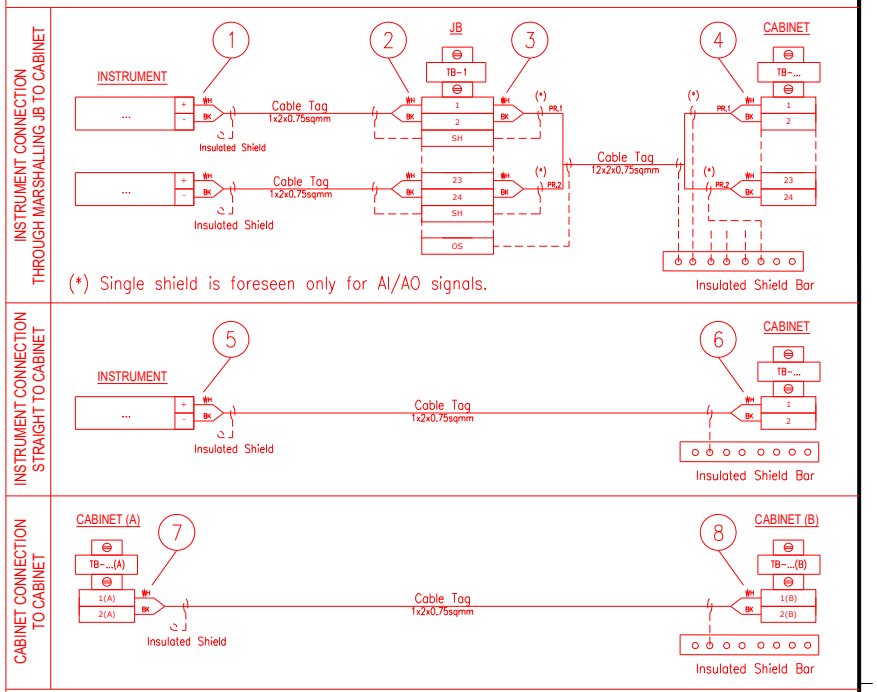


8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

I.E.	- GREEN —— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW —— P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

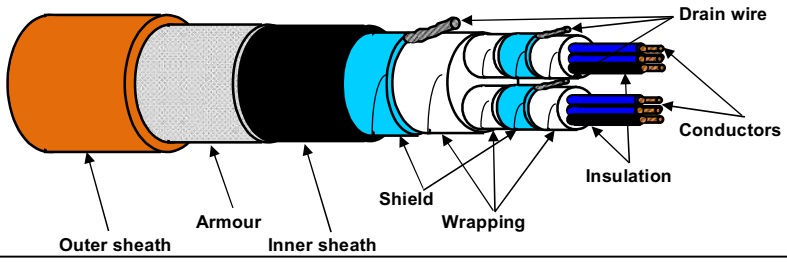
File Name : - 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-BDV-016\00-JE-22001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						25-BDV-016	On/Off Valve	Upper Deck		00-JE-22001	DI JB to SIS	Upper Deck	Junction Box	SMICV09-2X2X0.75	Cable Cu CI.2/MGT/XLPE/ISOS/LSZH/SWB/LSZH 150/250V (300V) 2x2x0.75mm² - Orange	M25	T2_M25_Double	M20	ADAP M20Ma M25F	T2_M25_Double				U-SEC-10 / U-SEC-2C / U-SEC-2B / U-SEC-2A / U-SEC-1B / U-SEC-3

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/IS/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2X0,75 - INSTRUMENT CABLE - Fire Resistant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires **IEC 60228 Class 2**
Insulation :	Mica/Glass Tape (MGT) plus XLPE, Nominal Thickness 0,5 mm
Cores colour code :	**White - Black (each core NUMBERED for PAIR identification)**
Pair Assembling :	10/1mt
Pair Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield
Pair Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Shield Insulation :	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Total Assembling :	5/1mt
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,3 mm
Inner sheath color code:	**Black**
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,5 mm
Outer sheath color code:	**Orange**
Outer printing (INKJET) :	**FLEI - 2X2X0,75 SQMM - MGT/XLPE/IS/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60331.21 -**
(every 1000 mm)	**IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(15,1 ± 10%) mm
Over armour diameter :	(16,3 ± 10%) mm
Outer diameter :	(19,3 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)
Mutual Capacitance :	≤ 150 nF/km
L/R ratio :	≤ 25 µH/Ω
Inductance :	≤ 0,9 mH/km
Applicable Standards	
Design Guidelines :	**IEC 60092.376**
ON COMPLETE CABLE	
Fire Resistant test :	**IEC 60331.21**
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

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The data provided in this catalog for low voltage cables are given with reference to the rules of the article 19 of the Regulation (UE) 305/2011, also by the information on the cable itself and/or on the delivery informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-25-BDY-016/00-JE-23001	: SOLENOID VALVE / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module	UD		
TASK	code	C10000174	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-MICA-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	2X2,5 mm2	Color	ORANGE
From	25-BDY-016	To	00-JE-23001		

1	Check cable is as specified in project cable schedule.	PL
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0.7	Ω
	SCREEN	0.7	Ω
	EARTH	NA	Ω
	ARMr	0.7	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

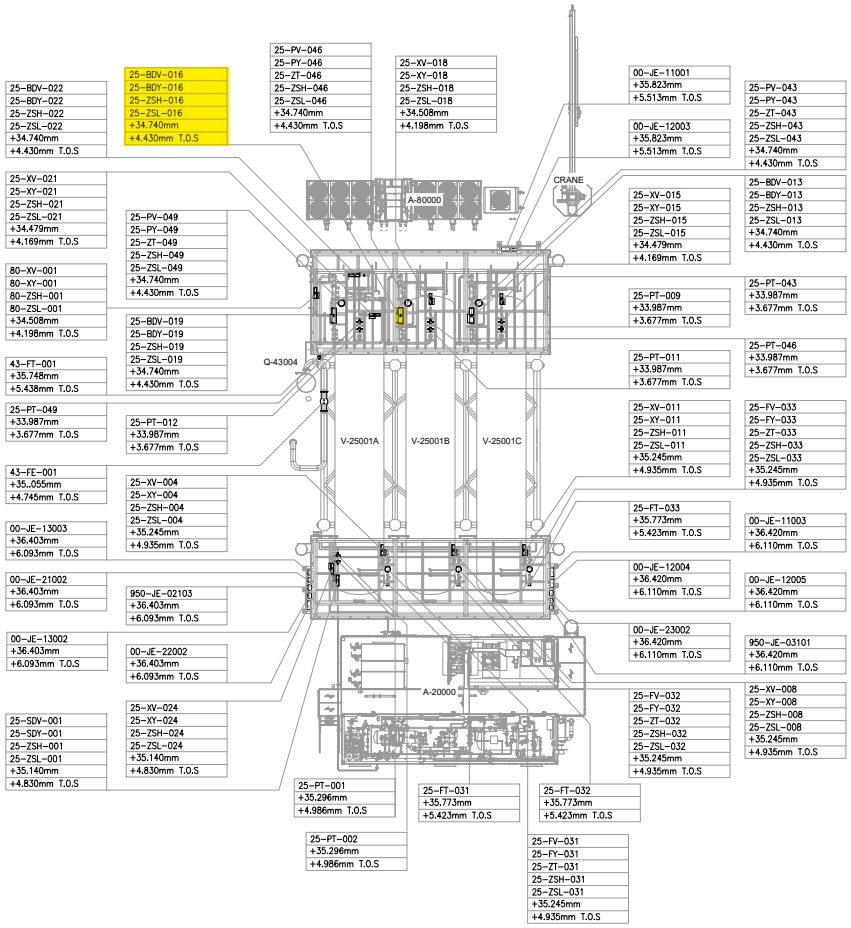
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Andrea Andreani	
Date	2025-02-03	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-03T13:57:17.017Z	PROVERLIS Digitaly signed by Andrea Andreani 2025-02-17T17:00:10.977Z	

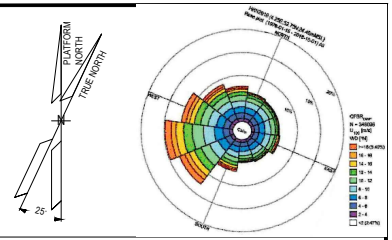
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

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2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

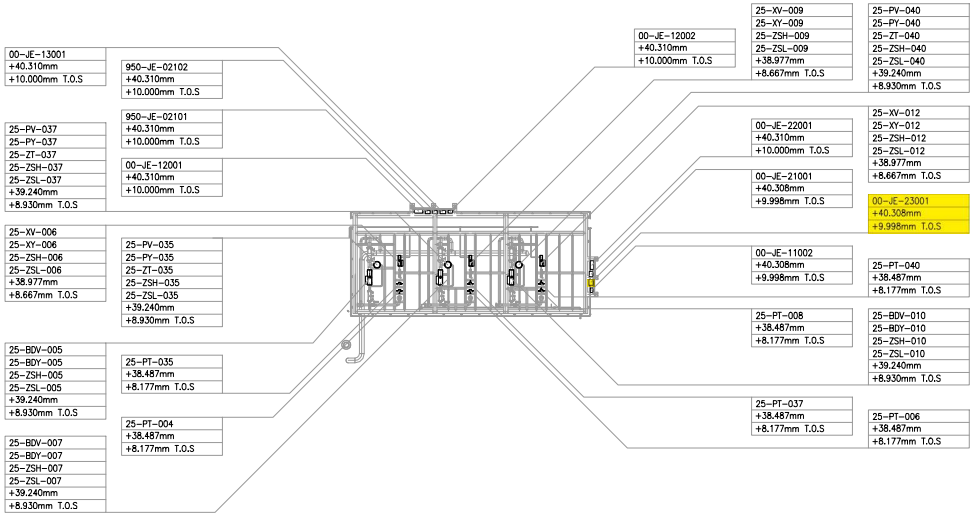
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

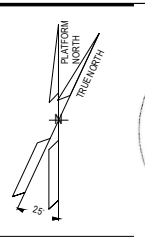
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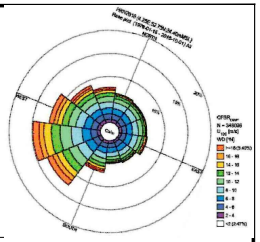
DRAWING NO. 123A90-DDL-IN-DL-40081 REV. 02



UPPER DECK
SCALE: 1:100

VIEW EL. 36500mm to 47060mm





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPT FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 003	REV. 02

File Name : 123A90-DDL-IN-DL-40081 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-23001	No.	MARSHALLING CABINET B400-SIS-001

<01>

INSTRUMENT		JUNCTION BOX TB-1	CABLE	MARSHALLING CABINET TB-00-JE-23001
25-BDY-005	+ 1BK / - 2BK	1BK, 2BK	C-25-BDY-005/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	1BK, 2BK — 25-BDY-005
25-BDY-007	+ 1BK / - 2BK	3BK, 4BK	C-25-BDY-007/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	3BK, 4BK — 25-BDY-007
25-BDY-010	+ 1BK / - 2BK	5BK, 6BK	C-25-BDY-010/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	5BK, 6BK — 25-BDY-010
25-BDY-013	+ 1BK / - 2BK	7BK, 8BK	C-25-BDY-013/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	7BK, 8BK — 25-BDY-013
25-BDY-016	+ 1BK / - 2BK	9BK, 10BK	C-25-BDY-016/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	9BK, 10BK — 25-BDY-016
25-BDY-019	+ 1BK / - 2BK	11BK, 12BK	C-25-BDY-019/00-JE-23001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	11BK, 12BK — 25-BDY-019

NOTE-2

TB-1 terminals: 1, 2, SH, 3, 4, SH, 5, 6, SH, 7, 8, SH, 9, 10, SH, 11, 12, SH, 13, 14, SH, 15, 16, SH, 17, 18, SH, 19, 20, SH, 21, 22, SH, 23, 24, SH, OS

13BK, 14BK, 15BK, 16BK, 17BK, 18BK, 19BK, 20BK, 21BK, 22BK, 23BK, 24BK

00-JE-23001/B400-SIS-001

12x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-00-JE-23001 terminals: 1 (1BK, 2BK) 25-BDY-005; 2 (3BK, 4BK) 25-BDY-007; 3 (5BK, 6BK) 25-BDY-010; 4 (7BK, 8BK) 25-BDY-013; 5 (9BK, 10BK) 25-BDY-016; 6 (11BK, 12BK) 25-BDY-019

Shield Bar — I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
I INSTRUMENT– SAFETY SYSTEM WIRING DIAGRAMS
00–JE–23001

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 018	REV. 01

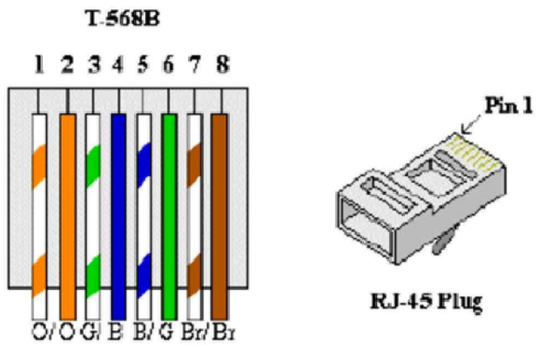
File Name : 123A90-DDL-IN-DG-40016_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



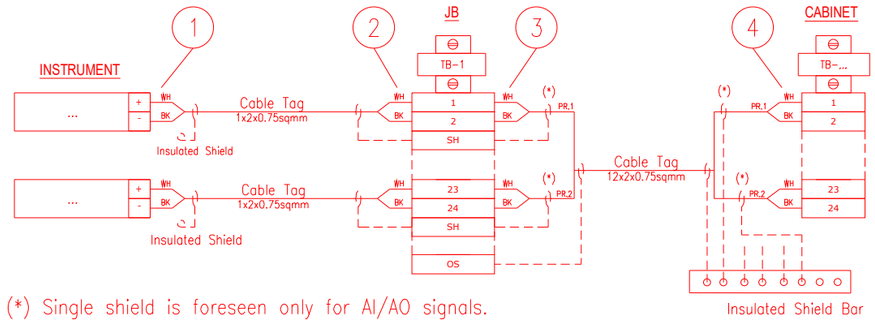
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

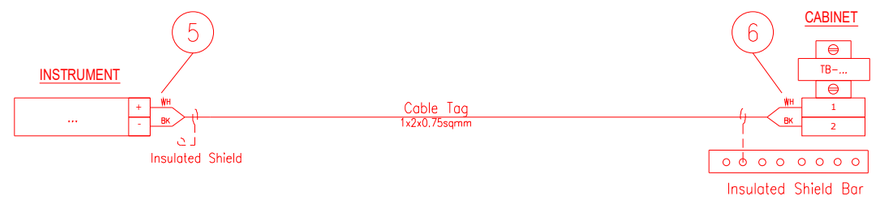
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

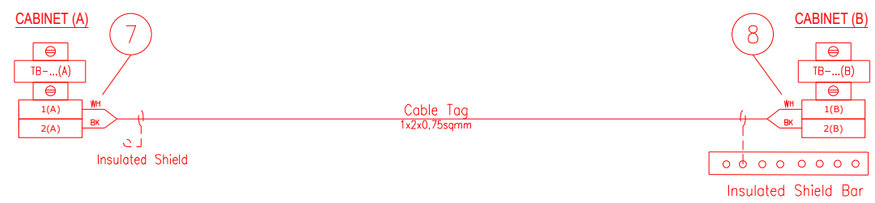
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_Q	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

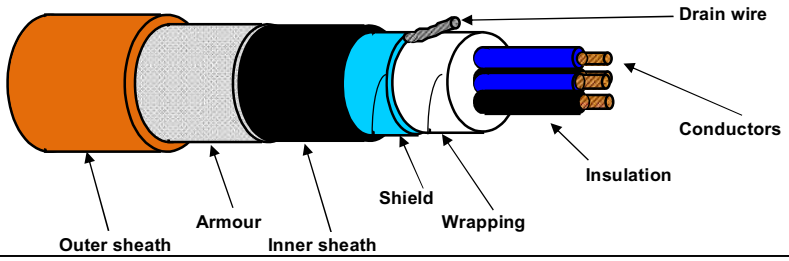
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-25-BDY-016\00-JE-23001	Cable	IN	VFC	123A80-DDL-IN-LIS-40091						25-BDY-016	Solenoid Valve	Upper Deck		00-JE-23001	DO JB to SIS	Upper Deck	Junction Box	SMICVI2-2X2.5	Cable Cu CI.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2.5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-1C / U-SEC-2C / U-SEC-2B / U-SEC-2A / U-SEC-1B / U-SEC-3

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2,5 - INSTRUMENT CABLE - Fire Resistant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	Mica/Glass Tape (MGT) plus XLPE, Nominal Thickness 0,6 mm	
Cores colour code :	**Black NUMBERED (from 1 to 2)**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	8/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,3 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 2X2,5 SQMM - MGT/XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60331.21 -**	
(every 1000 mm)	**IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(10,3 ± 10%) mm	
Over armour diameter :	(11,5 ± 10%) mm	
Outer diameter :	(14,1 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Fire Resistant test :	**IEC 60331.21**	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ITEM	Tag	25-FT-038	: Flow Transmitter - Nitrogen to V-25001E Vessel		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10000921	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity STS	Discipline Instrumental	Form	TJX04	Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000791-QC-PRO-00008

CALIBRATION/TEST PROCEDURE N° : 123A90-QHSE-PRO-00122

MODEL N° :	MT3809 / 3809GCA10AGBC3D2C0AC	SERIAL N° :	06C43100315
DATA SHEET N° :	1724000791-IN-DS-00004	Rev :	04
TEST EQUIPMENT :	Note	SERIAL N° :	Note

Instruments calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet Yes

Following section must be filled only if certificate is not valid or missing

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING						FALLING						UNITS
INPUT A	Note												
INPUT B *													
INPUT C *													
OUTPUT													

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

If required produce Red Line Mark Up for "AS BUILT"

Comments: Note: See attachment

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Eleonora Carotenuto	
Date	2024-12-11	2024-12-14	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-11T09:41:06.086Z	PROVERLIS Digitaly signed by Eleonora Carotenuto 2024-12-14T07:54:10.971Z	

Product/Calibration Data Sheet

PPDS: 3.2
VASE: 5.9

Device Information

Serial Number
06C43100315

Model Number
MT3809

Customer Name
ROSETTI MARINO S.p.A

Customer PO Number
6032967

Customer Fluid
N2

Full Scale Flow
62 m3/h

Reference Temperature
0.00 °C

Customer Pressure
3 bar(g)

Customer Viscosity
0.0173cP

Customer Temperature
10.50 °C

Customer Fluid Density
0.0048 GM/CC

Calibration Information

Calibration Fluid
AIR

Calibration Flow Rate
1140.045 lpm

Calibration Pressure
50.78 psig

Calibration Temperature
70.00 °F

Calibration Location
Szekesfehervar

Calibration Procedure
834P054 // CAL038

Calibration Software/Revision
VA CAL.Rev 2.8.5.0 SW PN 805E002

Calibration Date
9/20/2024

Calibration System ID
06000/004

Calibrator Clock Number
472

Mechanical Information

Tube
Size 10-A

Float
10-A, 316L SS

Meter Accuracy
1

Accuracy Scale
% FS

Customer Tag or Part #
25-FT-038

Reference Number
1

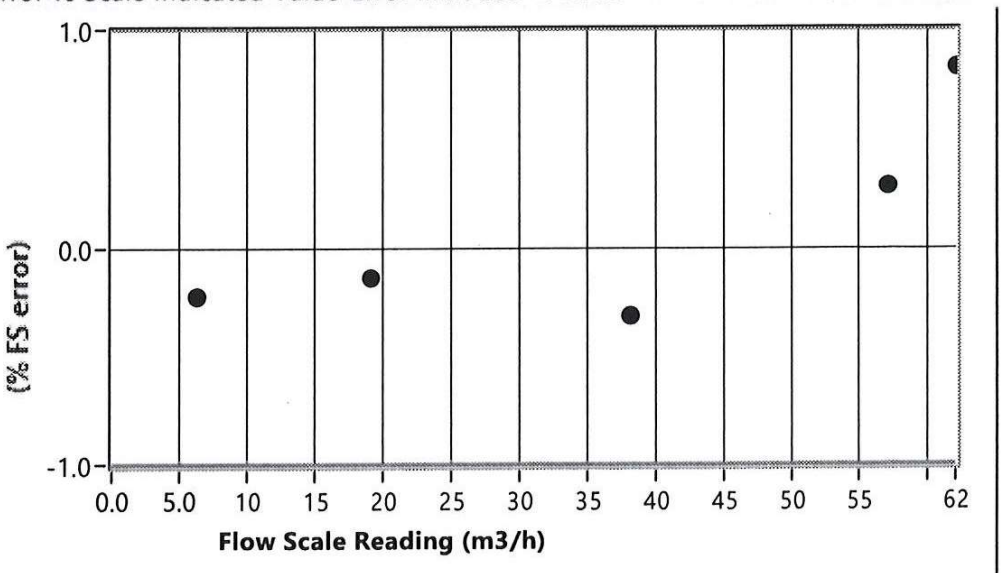
Alternate ID
N/A

Calibration Notes
WITNESSED ON 04/OCT/2024

Scale Check Data

Scale Reading	Flow (m3/h)	Error (% of FS)
62.00	62.515814	0.83
57.00	57.178111	0.29
38.00	37.808238	-0.31
19.00	18.916276	-0.14
6.20	6.064359	-0.22

Error vs Scale Indicated Value-Error limit acc. 1 % FS



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F (215) 362-3745
www.BrooksInstrument.com

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F 31-318-549-309

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Berényi str 72-100, Hungary
T +36/22-543-775
F +36/22-543-778

Brooks Instrument
1-4-4 Kitasuna Koto-Ku
Tokyo, 136-0073, Japan
T 011-81-3-5633-7105
F 011-81-3-5633-7124

BROOKS® INSTRUMENT

This report shall not be reproduced, except in full, without written approval from Brooks Instrument.

On behalf of RM
[X] Witness [ ] Review
Name: Vince Guy
Date:

Ref. OPN-001

Witnessed by
Milad Mousavi
Falkrum on behalf of crosswind
04.10.2024

GENERAL	1	Tag Number		25-FE-038 / 25-FT-038		
	2	Service		NITROGEN TO HYDROGEN STORAGE VESSEL (V-25001E		
	3	P & ID No.		123A90-DDL-PR-PID-80020		
	4	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1		
	5	Line No.		1"-HY-190-03HSS-N		
	6	Line Size	Line Schedule	1"	40S	
	7	Line Material		ASTM A312 Gr. TP316/316L		
PROCESS CONDITIONS	8	Fluid		NITROGEN		
	9			Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	10	Flow		Nm^3/hr		40	
	11	Temperature		°C		15	
	12	Pressure		barg		0 - 3	
	13	Max Velocity		5 - 21 m/sec		
	14	Fluid Conductivity	Min.	0.021 kcal/hr m K		
	15	Vacuum Possibility		NO		
	16	Ambient Temperature (min/norm/max)		-8.4 / 10.5 / 25 [°C]		
	17					
METERING ELEMENT	18					
	19					
	20	Connection Size	Type & Rating	1"	Flanged #300 RF	
	21	Connection Materials		SS 316/316L Dual Cert.		
	22	Float Type		SELF-CLEANING		
	23	Float Material		SS 316L		
	24	Meter Casing		SS 316/316L Dual Cert.		
	25	Meter Scale Type	Meter Factor	-	-	
	26	Meter Scale Range		6.2 - 62 Nm3/h		
	27					
	28					
ASSOCIATED INSTRUMENT	29	Tag No.		25-FT-001 (3) - Housing in AISI 316		
	30	Function		Flow Transmitter		
	31	Mounting		INTEGRAL with LCD/Engineering Unit		
	32	Electrical Connection	Electrical Class	N. 2 M20x15.5mm	-	
	33	Signal Cable Length		-		
	34	ATEX Certification	Ingress Protection	II 2 G Ex db IIC T6…T1 Gb	IP66	
	35	Power Supply		Loop powerd		
	36	Output		4-20mA, HART		
	37	Accuracy	Repeatability	+/- 1 % F.S.	-	
	38	Rangeability		10:1		
	39	Alarm Contact: No.	Form	-	-	
	40	Alarm Contact: Rating		-		
	41	Alarm Contact: Action		-		
	42	SIL Certification	PED Certification	-	Required (8)	
PURCHASE	43	Manufacturer		BROOKS INSTRUMENT		
	44	Model		3809GCA10AGBC3D2C0AC		
	45	Purchase Order Number		1724000791		

Notes:

No.	Date	By	Chkd	Appr	Description
01	29/08/2024	VB	LC	DL	Accepted for Construction (AFC)
00	23/02/2024	VB	LC	DL	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

Variable Area Flow Meter

CROSSWIND

ROSETTI MARINO

Sheet 10 of 11

Code : 301 | Dwg. No.: 123A90-DDL-IN-DS-40045 | Rev 01

General Data	1	Tag Number					25-FT-038			
	2	Service					NITROGEN TO HYDROGEN STORAGE VESSEL (V-25001E)			
	3	Area Classification					ATEX Zone2 - IIC (IIB+H2) T1			
	4	Line No.		Line Class			1"-HY-190-03HSS-N			
	5	Line Size		Line Schedule			1"		Thk (mm) = 3.38	
	6	P&ID No.					123A90-DDL-PR-PID-80020			
	7									
Process Data	8	Fluid		State			NITROGEN		GAS	
	9	Ambient Temperature (min/norm/max)					-8.4 / 10.5 / 25			°C
	10	Design Pressure								bar (G)
	11	Flow Rate	Min.	Nor.	Max.	Units		40		NM3/H
	12	Press.	Min.	Nor.	Max.	Units		0 - 3		bar (G)
	13	Temp.	Min.	Nor.	Max.	Units		15		°C
	14	Density	Min.	Nor.	Max.	Units				
	15	Molecular Weight	Min.	Nor.	Max.	Units				
	16	Viscosity	Min.	Nor.	Max.	Units				cP
	17	Pressure Drop					60			mbar
	18									
Meter	19	Type					Armoured Metal Tube Variable Area Flowmeters - Magnetic			
	20	Connection Size & Type					1" ANSI 300# RF Flange			
	21	Tube Material					316SS/316L SS Dual Cert.			
	22	Float Material					316L SS			
	23	Connection Material					316SS/316L SS Dual Cert.			
	24	Meter Scale Range					6.2 - 62			NM3/H
	25	Accuracy					1% F.S. / Direct Reading Scale			
	26	Inlet Direction		Outlet Direction			Bottom		Top	
	27									
Indicator / Transmitter	28	Output Signal					Local Indicator with 4-20mA / Hart 7			
	29	Calibration Range					6.2 - 62			NM3/H
	30	Power Supply					24 VDC Loop Power / 2 wired			
	31	Elect. Connection		Elect. Material			M20 x 1.5			N/A
	32	Elect. Protect Class					Div 1 ABCD / Zone 1 IIC, Flame-proof XP - ATEX/IECEX/CSA			
	33	Surge Protection Device					3809 Transmitter designed as per IEC61000-4.5			
	34	Indicator Housing					X-proof SS Housing, IP66/67			
	35									
Accessories / Special Service	36	Adjustable Valve					N/A			
	37	Valve Connection Size & Type					N/A			
	38	Pressure Gauge		Pressure Regulator			N/A		N/A	
	39	Painting					N/A			
	40	Tag Plate (316SS wired)					Included			
	41	Name Plate (316SS wired)					Included			
	42									
Purchase	43	Manufacturer					Brooks Instrument			
	44	Model No.					3809GCA10AGBC3D2C0AC			
	45	Serial No.								
	46	Purchase Order Number					PO 1724000791			
	47									

Notes :

No.	By	Date	Revision
D	KP	08/11/2024	Issued for Approval
C	KP	19/09/2024	Issued for Approval
B	KP	01/07/2024	Issued for Approval
A	KP	05/06/2024	Issued for Review

INSTRUMENT DATA SHEET FOR ROTAMETER

BROOKS® INSTRUMENT *Beyond Measure*

Doc. No.	Instrument Data Sheet	Rev.	D
		Sheet	6 of 7

VA Web Sizing App v5.9

Step 4: Generate scale details

User input fields are shaded.

Fluid Name	NITROGEN, N2		
Temperature	10.5 °C	Density	0.004774 GM/CC
Back Pressure	3 BARG	Viscosity	0.01725 cP
Phase	Gas		
Flow Type	Standard VolumetricFlow		
Flow Rate	62 NM3/H		
Ref Cond	0 °C & 1 atm		
Prod Family	MT3809	Tube	Size 10-A
Size	10	Float	10-A, 316L SS

This application performs VA flow meter sizing calculations only. Product pressure and temperature limitations are not considered. This application is not intended to replace the selection by a qualified person.

Scale Details

Scale Details

```
Scale range: 6.2 - 62
NM3/H  N2 @ 10.5 °C & 3 BARG
```

Comments

Tag Numbers: 25-FT-031, 25-FT-032, 25-FT-033, 25-FT-034, 25-FT-036, 25-FT-038

ITEM	Tag	25-PT-011	: Pressure Transmitter - Vessel V-25001E Hydrogen Vent System			Dwg	123A90-DDL-IN-DS-40039
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10000928		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Instrumental	Form	TJX04 Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000979-QC-PRO-00005

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	SST76-SERIES	SERIAL N° :	SE240644
DATA SHEET N° :	1724000979-IN-DS-00004	Rev :	3
TEST EQUIPMENT :		SERIAL N° :	

Instruments calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet

Following section must be filled only if certificate is not valid or missing

See Attachment

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING	FALLING	UNITS
INPUT A			
INPUT B *			
INPUT C *			
OUTPUT			

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

If required produce Red Line Mark Up for "AS BUILT"

Comments:

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-17	2024-10-02	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-09-17T06:37:15.765Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-02T09:52:47.544Z	

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C.F. Part. IVA 02764420390

Plant	CROSSWIND	Description	HYDROGEN STORAGE VESSEL V-25001E		
Area	V-25001E	Loop Tag	25-PI-011	Instrument Tag	25-PT-011
Type of verification	periodic	Calibration range	0,00 ÷ 40,00 bar	Report N°	011
Type of instrument	Pressure meter	Max uncertainty required	± 0,070 % s.r.	Reference procedure data sheet	123A90-PML-QHSE-PRO-00122 Page N°8

UNDER EXAMINATION INSTRUMENT 'S DATA

Tag	Manufacture	Model	S/N
25-PT-011	SPRIANO	SST76	SE240644

USED REFERENCE SAMPLE 'S DATA

Manufacture	Model	S/N	n° of certification and calibration center	uncertainty (u.m.)	Date of issue
BEAMEX	MC5-IS	20177766	0639/MP/2024 _ LAT 150	± 0,001 c.s.	24/04/2024
BEAMEX	EXT600	64024	0639/MP/2024 _ LAT 150	± 0,001 c.s.	24/04/2024

environment temperature at the time of check 25 °C

Value indicated before starting the check 0 bar

CHECK RESULT: *as found*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
0,00	4,00	4,000	+0,000	+0,000
10,00	8,00	7,999	-0,001	-0,006
20,00	12,00	11,994	-0,006	-0,039
30,00	16,00	15,996	-0,005	-0,028
40,00	20,00	19,997	-0,003	-0,020
30,00	16,00	15,995	-0,005	-0,031
20,00	12,00	11,995	-0,005	-0,031
10,00	8,00	7,999	-0,001	-0,006
0,00	4,00	3,999	-0,001	-0,006
		max error detected %		0,039

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar					

Check: PASSED

Blocks/alarms check:

Corrective action

CHECK RESULT: *as left*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
		errore massimo rilevato %		0,00

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar	DESCENT				

Check:

Blocks/alarms check:

Value indicated after the check 0 bar

Note:

FINAL OUTCOME OF THE VERIFICATION: *The instrument is SUITABLE*

Verification Date	Verification Expiration	Technical Executor	Viewed	Approved by
18/09/2024	09/2025	PENSO SILVIO		
		signature	signature	signature

ABR SERVICE srl
Via M. Monti, 40 - 48123 RAVENNA
Tel. 0544 685411
C.F. e P.IVA 02764420390

GENERAL	1	Tag Number			25-PT-011	
	2	Service			HYDROGEN STORAGE VESSEL (V-25001E)	
	3	P&ID Number	Location		123A90-DDL-PR-PID-80019	V-25001E
	4	Function			PRESSURE MEASUREMENT	
	5	Mounting			DIRECT ON-LINE	
	6	Area Classification			ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature			Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid			HYDROGEN	
	9	Pressure Des.	Oper.	[barg]	40	30
	10	Temperature Des.	Oper.	[°C]	-10 / + 80 °C	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity		-	-
	12	Flow Rate	Allowable Temp.		-	-
TRANSMITTER	13	Instrument Range Min.	Max.	[barg]	0	100
	14	Calibration Range Min.	Max.	[barg]	0	40
	15	Elevation	Suppression		-	-
	16	Element Type			Diaphragm	
	17	Element Material			SS AISI 316/316L GOLD PLATED	
	18	Body Material	Body Rating		AISI 316 SS	200 bar
	19	Process Connection			1/2” NPT-M	
	20	Wetted O-Rings Material			-	
	21	Fill Fluid			-	
	22	Bolts	Housing		Manifold/Instrument assembly	SS AISI 316/316L
	23	Paint			N/A	
	24	ATEX Certification	Ingress Protection		ATEX Ex II 2G Ex db IIC T5	IP66
	25	Process Connection	Electrical Connection		1/2” NPT-M	2 X M20X1.5
	26	Accuracy			0.07% of Nominal Range	
	27	SIL Certification	PED Certification		SIL2	Required
DIAPHRAGM SEAL	28	Process Connection & Rating			-	
	29	Diaphragm Material	Housing Material		-	-
	30	Fill Fluid	Capillary Material		-	-
	31	Capillary Type	Capillary Length		-	-
	32	Flushing Connection			-	
OPTIONS	33	Integral Meter	Scale		Required	-
	34	Hydrostatic Testing	Cleaning		Required	-
	35	Mounting Brackets	Manifold Model No		Required	MAN2-R6
	36	Lightning Protection	Barrier Manuf./Model		-	-
COMMUNICATION AND SOFTWARE	37	Communication Type	Signal Type		HART 6	4-20mA Loop Powered 24 Vdc
	38	D D Revision	CFF Revision		-	-
	39	Device Tag	Hart Tag		-	-
	40	Internal Diagnostics	Capacitance		-	-
	41	Segment	Device Address		-	-
	42	Device Class	Simulate		-	-
	43	Nominal Current	Operating Voltage		-	-
PURCHASE	44	Manufacturer			TERRANOVA SRL	
	45	Model			SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	46	Purchase Order Number			4718_OS	

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ITEM	Tag	25-PT-046	: Pressure Transmitter - Vessel V-25001E Pressure Control			Dwg	123A90-DDL-IN-DS-40039
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10000934		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Instrumental	Form	TJX04 Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000979-QC-PRO-00005

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	SST76-SERIES	SERIAL N° :	SE240645
DATA SHEET N° :	1724000979-IN-DS-00004	Rev :	3
TEST EQUIPMENT :		SERIAL N° :	

Instruments calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet

Following section must be filled only if certificate is not valid or missing

See Attachment

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING	FALLING	UNITS
INPUT A			
INPUT B *			
INPUT C *			
OUTPUT			

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

If required produce Red Line Mark Up for "AS BUILT"

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-17	2024-10-02	
Signature	Digitaly signed by Carmelo Bongiovanni 2024-09-17T06:39:00.023Z	Digitaly signed by Giovanni Tangianu 2024-10-02T09:37:36.872Z	

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C.F. Part. IVA 02764420390

Plant	CROSSWIND	Description	HYDROGEN STORAGE VESSEL V-25001E		
Area	V-25001E	Loop Tag	25-PI-046	Instrument Tag	25-PT-046
Type of verification	periodic	Calibration range	0,00 ÷ 40,00 bar	Report N°	012
Type of instrument	Pressure meter	Max uncertainty required	± 0,070 % s.r.	Reference procedure data sheet	123A90-PML-QHSE-PRO-00122 Page N°8

UNDER EXAMINATION INSTRUMENT 'S DATA

Tag	Manufacture	Model	S/N
25-PT-046	SPRIANO	SST76	SE240645

USED REFERENCE SAMPLE 'S DATA

Manufacture	Model	S/N	n° of certification and calibration center	uncertainty (u.m.)	Date of issue
BEAMEX	MC5-IS	20177766	0639/MP/2024 _ LAT 150	± 0,001 c.s.	24/04/2024
BEAMEX	EXT600	64024	0639/MP/2024 _ LAT 150	± 0,001 c.s.	24/04/2024

environment temperature at the time of check 25 °C

Value indicated before starting the check 0 bar

CHECK RESULT: *as found*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
0,00	4,00	3,999	-0,001	-0,006
10,00	8,00	7,991	-0,009	-0,056
20,00	12,00	12,002	+0,002	+0,013
30,00	16,00	16,001	+0,001	+0,006
40,00	20,00	19,991	-0,009	-0,056
30,00	16,00	16,000	+0,000	+0,000
20,00	12,00	12,001	+0,001	+0,006
10,00	8,00	7,992	-0,008	-0,050
0,00	4,00	3,999	-0,001	-0,006
		max error detected %		0,056

Check: PASSED

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar					

Blocks/alarms check:

Corrective action

CHECK RESULT: *as left*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
		errore massimo rilevato %		0,000

Check:

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar					

Blocks/alarms check:

Value indicated after the check 0 bar

Note:

FINAL OUTCOME OF THE VERIFICATION: ***The instrument is SUITABLE***

Verification Date	Verification Expiration	Technical Executor	Viewed	Approved by
20/09/2024	09/2025	PENSO SILVIO		
		signature	*signature*	*signature*

ABR SERVICE srl
Via M. Monti, 40 - 48123 RAVENNA
Tel. 0544 685411
C.F. e P.IVA 02764420390

GENERAL	1	Tag Number			25-PT-046	
	2	Service			HYDROGEN STORAGE VESSEL (V-25001E)	
	3	P&ID Number	Location		123A90-DDL-PR-PID-80019	V-25001E
	4	Function			PRESSURE MEASUREMENT	
	5	Mounting			DIRECT ON-LINE	
	6	Area Classification			ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature			Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid			HYDROGEN	
	9	Pressure Des.	Oper.	[barg]	40	30
	10	Temperature Des.	Oper.	[°C]	-10 / + 80 °C	Amb.
	11	Oper. Spec. Gravity	Oper. Viscosity		-	-
	12	Flow Rate	Allowable Temp.		-	-
TRANSMITTER	13	Instrument Range Min.	Max.	[barg]	0	100
	14	Calibration Range Min.	Max.	[barg]	0	40
	15	Elevation	Suppression		-	-
	16	Element Type			Diaphragm	
	17	Element Material			SS AISI 316/316L GOLD PLATED	
	18	Body Material	Body Rating		AISI 316 SS	200 bar
	19	Process Connection			1/2” NPT-M	
	20	Wetted O-Rings Material			-	
	21	Fill Fluid			-	
	22	Bolts	Housing		Manifold/Instrument assembly	SS AISI 316/316L
	23	Paint			N/A	
	24	ATEX Certification	Ingress Protection		ATEX Ex II 2G Ex db IIC T5	IP66
	25	Process Connection	Electrical Connection		1/2” NPT-M	2 X M20X1.5
	26	Accuracy			0.07% of Nominal Range	
	27	SIL Certification	PED Certification		-	Required
DIAPHRAGM SEAL	28	Process Connection & Rating			-	
	29	Diaphragm Material	Housing Material		-	-
	30	Fill Fluid	Capillary Material		-	-
	31	Capillary Type	Capillary Length		-	-
	32	Flushing Connection			-	
OPTIONS	33	Integral Meter	Scale		Required	-
	34	Hydrostatic Testing	Cleaning		Required	-
	35	Mounting Brackets	Manifold Model No		Required	MAN2-R6
	36	Lightning Protection	Barrier Manuf./Model		-	-
COMMUNICATION AND SOFTWARE	37	Communication Type	Signal Type		HART 6	4-20mA Loop Powered 24 Vdc
	38	D D Revision	CFF Revision		-	-
	39	Device Tag	Hart Tag		-	-
	40	Internal Diagnostics	Capacitance		-	-
	41	Segment	Device Address		-	-
	42	Device Class	Simulate		-	-
	43	Nominal Current	Operating Voltage		-	-
PURCHASE	44	Manufacturer			TERRANOVA SRL	
	45	Model			SST76-H-7-L-2-9-2-1-4 + MAN2-R6	
	46	Purchase Order Number			4718_OS	

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ITEM	Tag	25-RO-016	: Restriction Orifice - Vessel V-25001E Hydrogen vent system			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001213		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX11 Orifice Plate

1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check that flow orifice is installed with correct flow direction clearly identified on the tab.	OK
5	Check tag number is stamped or engraved on tab.	OK
6	Check accessibility conforms to specifications, with platforming where necessary.	OK
7	Check calibration certificate/conformity.	OK
8	Check plate flatness and surface finish.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:14:45.822Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-13T10:26:24.186Z	

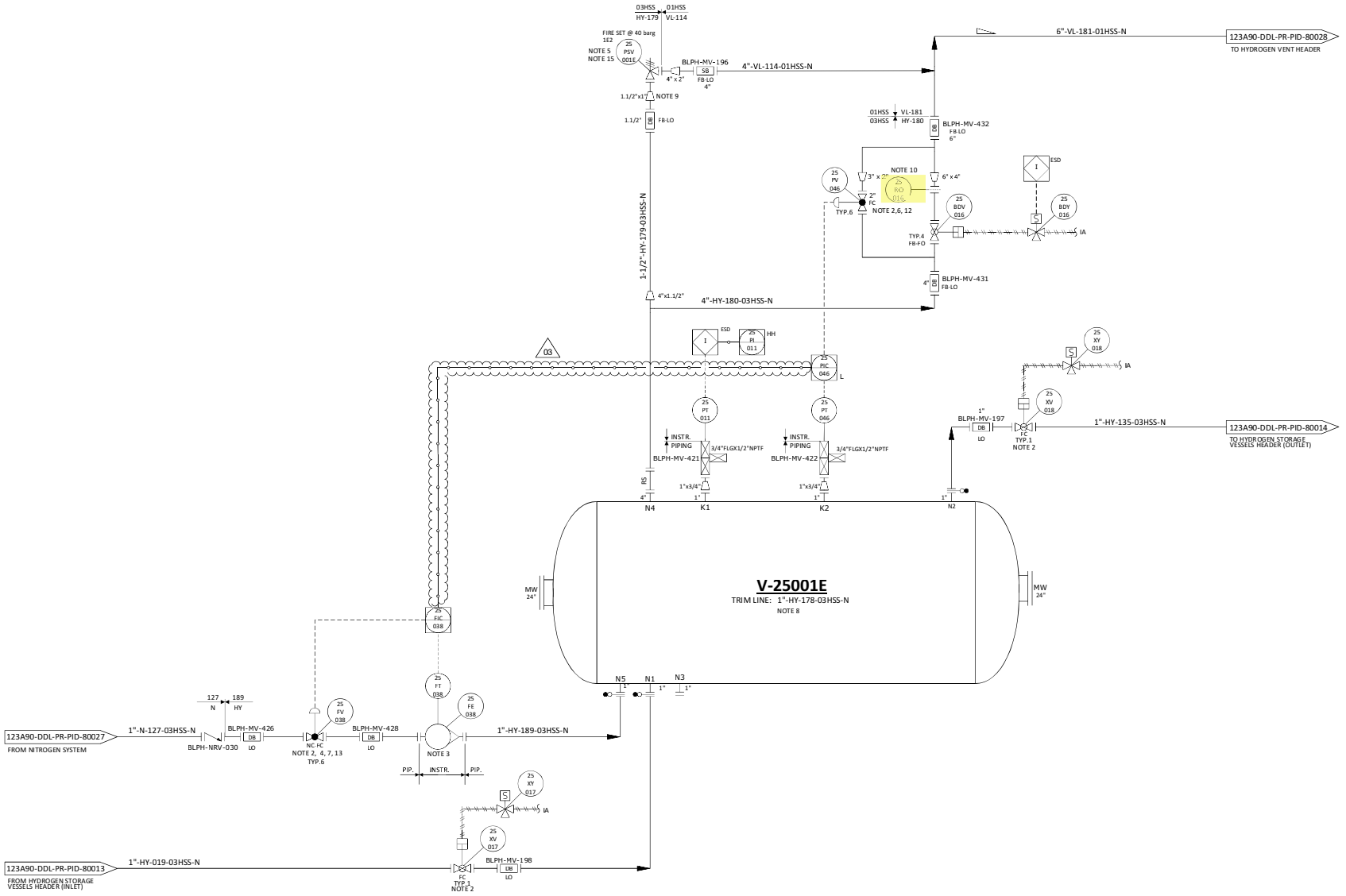
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

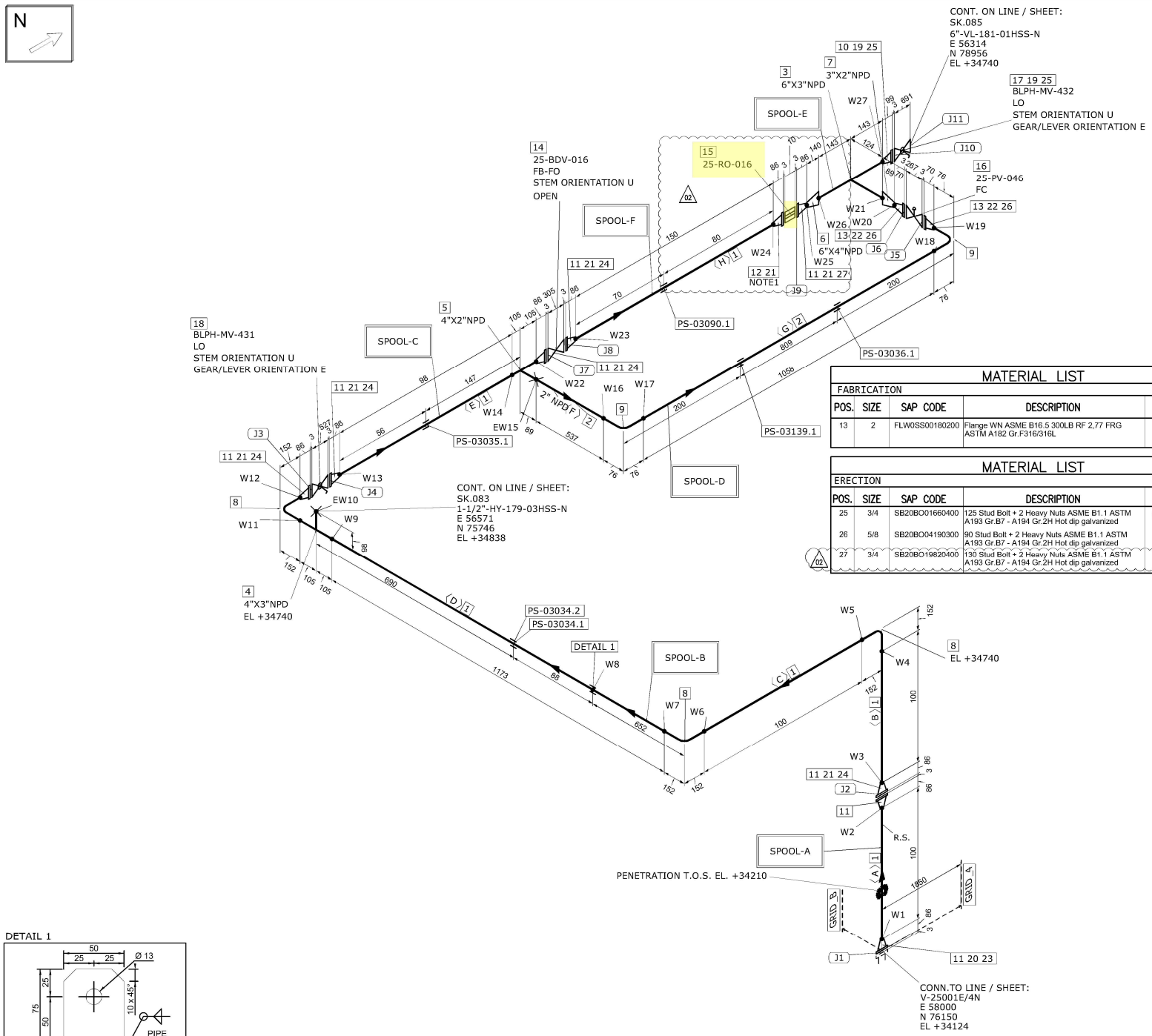
CROSSWIND

ROSETTI MARINO

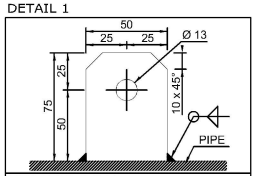
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name : FILE_NAME



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	800.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

LINE DATA							
NOT INSPECTION CATEGORY	1	PED CATEGORY	III				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

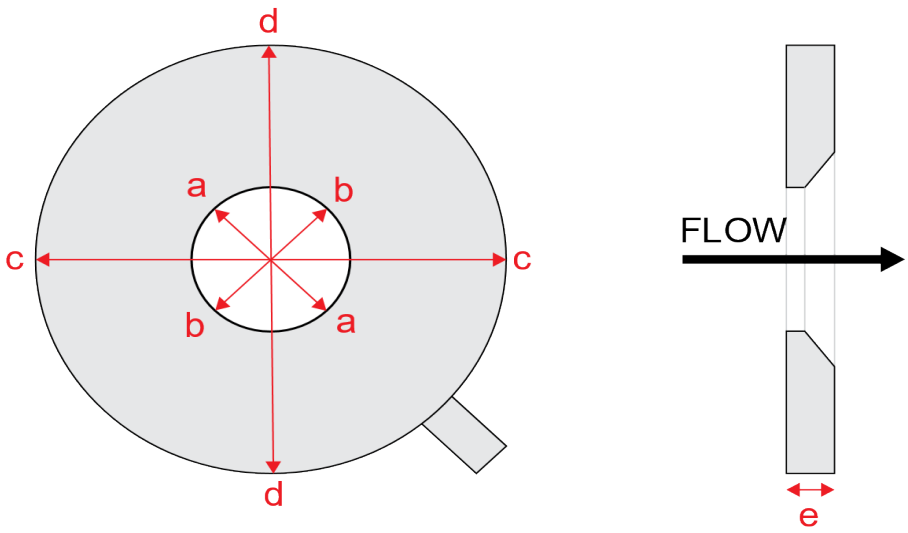
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT
APPROVED	LM	DATE	17-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00084
SHEET / OF	1/1	REV.	02

ITEM	Tag	25-RO-016	: Restriction Orifice - Vessel V-25001E Hydrogen vent system		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001441	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity STS	Discipline Instrumental	Form	TJX11	Orifice Plate

EQUIPMENT DATA

CALCULATION SHEET REF:	1724001690-IN-CA-00005		
DATA SHEET N°:	123A90-DDL-IN-DS-40054		
MATERIAL	AISI 316/316L	SPECIFIED THICKNESS:	10 mm
SPECIFIED OD:	181 mm	MODEL N°:	Restriction orifice - multiholes
TEST EQUIPMENT:	Vernier caliper	SPECIFIED ID:	4,22 mm

TEST DETAILS



Measured Diameter : **a**	4,2 mm	Measured Diameter : **b**	4,2 mm
Measured Diameter : **c**	180 mm	Measured Diameter : **d**	180 mm
Actual plate thickness : **e**	10 mm	Flow element correctly stamped:	OK
Presence of degasing holes	No	Presence of degasing holes	No
TESTED LABEL AFFIXED	No	DATA SHEET ATTACHED	Yes

If required produce Red Line Mark Up for "AS BUILT"

Comments: 26 straight holes

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2024-12-18	2024-12-19	
Signature	Digitaly signed by Emanuele Delfino 2024-12-18T05:19:02.072Z	Digitaly signed by Kangi Albonetti 2024-12-19T16:38:32.070Z	

TERRANOVA®

WE DO PROCESS INSTRUMENTATION PRECISELY

SPRIANO Valcom MEC·RELA

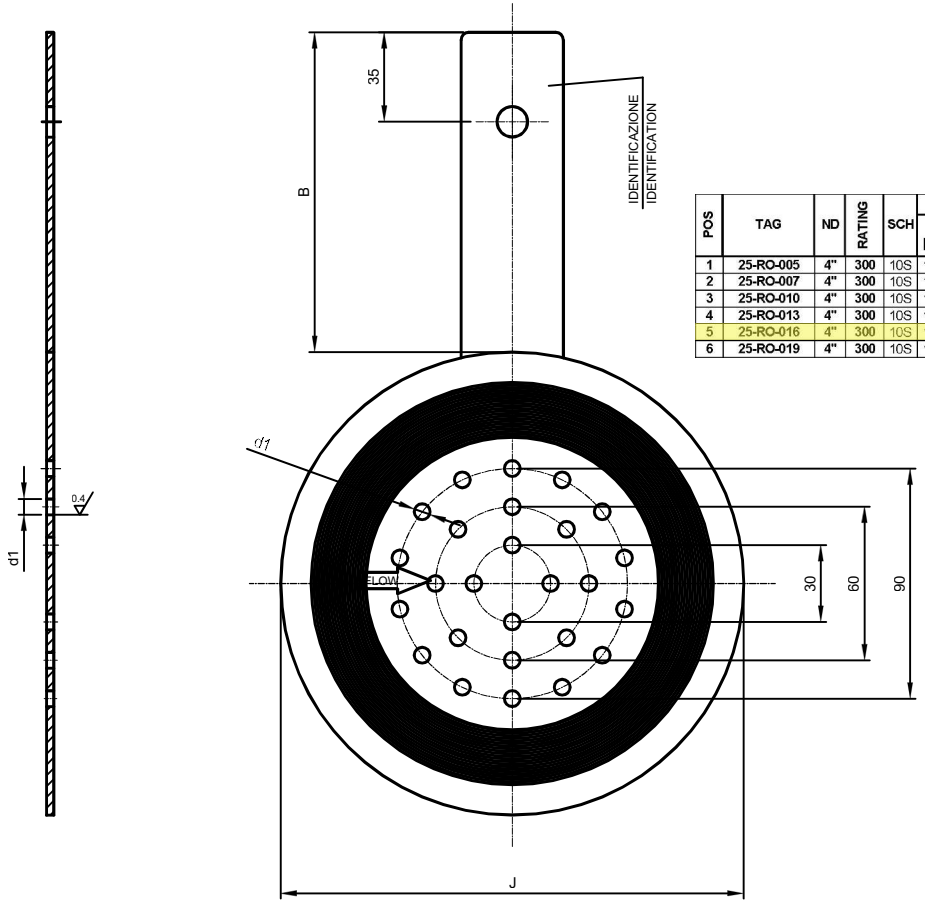
Customer:	ROSETTI MARINO	PO	:4791_OS
TAG	:25-RO-016	Doc	:1724001690-IN-CA-00005-01
TAGFluid	:HYDROGEN_GAS	Sales Order:	/
Fluid Ref.	:ENTER HYDROGEN_GAS	Service	:HYDROGEN GAS
Pipe	:316 Stainless Steel	Primary	:316 Stainless Steel
Meter	:Orifice:Choked Flow	Taps	:Upstream
Coeff Eq	:Ward-Smith	Calculation	:SIZE
Preparer	:THORAT	Printed	:30/07/2024

---------- Flow ----------		
Flow Rate	2047,00	kg/h
Pipe Reynolds Number	669032,	
---------- Measurements ----------		
Pressure (Upstream pG1)	30,0000	Bar,gage
Pressure (Downstream pG2)	15,9115	Bar,gage
Choking Pressure Ratio pf2/pf1	0,5457	
Barometric	1,0133	Bar,abs
Temperature Flowing	25,0000	degC
---------- Fluid Properties @ dry conditions ----------		
Density Flowing	2,5021	kg/m^3
Specific Gravity, G	0,0691	
Molecular Weight (Mw)	2,0000	
Compressibilty (Zf)	1,0000	
Viscosity	0,0100	cP
Isentropic Exponent(Cp/Cv)	1,3000	
----------Factors----------		
Discharge Coefficient(C)	0,8392	
Pipe Thermal Expansion (FaD)	1,0001	
Critical Flow Function (Ycr)	0,6673	
---------- Design Information ----------		
Pipe Diameter(D)	108,20400	mm@20, degC
Bore Diameter (d)	21,53988	mm@20, degC
Beta	0,19907	@20, degC
Orifice Minimum Thickness (tPE)	21,5399	mm
Pipeline Velocity V	24,71	m/s
Overall Pressure Loss	14,0885	Bar

BORE DIAMETER AND THICKNESS AS DISPLAYED ON THE GAD TABLE

R.W. Miller and Associates, Inc. The FLOW CONSULTANT TM Licensed Software C1987-2012 Version 7.1.00

ORI ORIFICE PLATES (MULTI HOLE)



POS	TAG	ND	RATING	SCH	PIPE			RESTRICTION ORIFICE								NOISE LEVEL [Dba]	CAV. NUMBER	NOTE	
					O.D. [mm]	I.D. [mm]	THK [mm]	MTL	n°OF HOLES	d [mm]	d1 [mm]	E [mm]	J [mm]	B [mm]	C [mm]				
1	25-RO-005	4"	300	10S	114,3	108,20	3,05	SS 316/316L	26	21,53	4,22	10	181,0	125	40	85		CRITICAL	THICK PLATE RESTRICTION
2	25-RO-007	4"	300	10S	114,3	108,20	3,05	SS 316/316L	26	21,53	4,22	10	181,0	125	40	85		CRITICAL	THICK PLATE RESTRICTION
3	25-RO-010	4"	300	10S	114,3	108,20	3,05	SS 316/316L	26	21,53	4,22	10	181,0	125	40	85		CRITICAL	THICK PLATE RESTRICTION
4	25-RO-013	4"	300	10S	114,3	108,20	3,05	SS 316/316L	26	21,53	4,22	10	181,0	125	40	85		CRITICAL	THICK PLATE RESTRICTION
5	25-RO-016	4"	300	10S	114,3	108,20	3,05	SS 316/316L	26	21,53	4,22	10	181,0	125	40	85		CRITICAL	THICK PLATE RESTRICTION
6	25-RO-019	4"	300	10S	114,3	108,20	3,05	SS 316/316L	26	21,53	4,22	10	181,0	125	40	85		CRITICAL	THICK PLATE RESTRICTION

NOTES:
1. FLOW METER REFERENCE CODE: ISO 5167 / MILLER ENGINEERING HANDBOOK
2. MARKING: MARKING DETAIL AS PER CUSTOMER SPECIFICATION (TAG / d / ID / SIZE / RATING / MATERIAL / REF CODE / DIRECTION OF FLOW (as minimum)
3. d, PRESSURE DROP: refer to CALCULATION SHEETS

CERTIFICATES
- Material Certificates 3.1 (EN 10204)
- PMI Test on all Plates
- Visual & Dimensional Test

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/10/24	MZ	GA	GO	ACCEPTED FOR CONSTRUCTION (AFC)
00	03/10/24	MZ	GA	GO	ISSUE FOR REVIEW (IFR)

TERRANOVA SPRIANO Nafcrm MEC-RELA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT DRAWINGS–RESTRICTION ORIFICE
RESTRICTION ORIFICE (MULTI HOLE)

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:2

A3 | DRAWING NO. 1724001690–IN–DA–00003 | SHEET 004 | REV. 01

F.to UNI A3: 420mmx297mm

File Name : 123A90.DDL.XX.XXXXXX Rev. 00

GENERAL	1	Tag Number			25-RO-016			
	2	Service			HYDROGEN FROM STORAGE VESSEL (V-25001E) TO HYDROGEN VENT HEADER			
	3	P&ID Number			123A90-DDL-PR-PID-80019			
	4	Line Number			4"-HY-180-03HSS-N			
	5	Line Size	Line Schedule		4"	Thk (mm) = 3.05		
	6	Line Material			ASTM A312 Gr.TP316/316L			
	7							
PROCESS CONDITIONS	8	Fluid	State		HYDROGEN	GAS		
	9	Design Pressure	Min.	Max.		40 barg		
	10	Design Temperature	Min.	Max.		80		
	11	Base Pressure	Base Temperature					
	12	Critical Pressure						
	13	Permanent Pressure Loss Across Meter						
	14	Entrained Gas / Liquid (% Mass)						
	15				Units	Note 14		Note 15
	16	Flow Operating			kg/h	2047		1300
	17	Upsteam Pressure			barg	30		28
	18	Temperature			°C	25		-8.4
	19	Density			kg/m^3	2.5		2.63
	20	Compressibility Factor			-	1		1
	21	Viscosity			cP	0.01		0.01
	22	Vapour Pressure						
	23	Specific Heat Ratio Cp/Cv			-	1.3		1.3
	24	Molecular Weight			2			
ORIFICE PLATE	25	Type			RESTRICTION ORIFICE - MULTIHOLES (Choked Flow)			
	26	Material			AISI 316/316L			
	27	Thickness			10mm			
	28	Bore Diameter			26 x 4.22mm (1)			
	29	Beta Ratio			0.19907			
	30	Drain or Vent Hole			N.A.			
	31	Flow Full Scale			2047 Kg/h			
	32	Differential Pressure @ Full scale			30 Barg - 15.9115 Barg = 14.0885 Bar			
	33	Choking Pressure Ratio			0.5457			
ORIFICE FLANGES	34	Size			4" (Flanges are Out of scope of Vendor's supply)			
	35	Rating			300#			
	36	Type			Flanged			
	37	Facing			RF			
	38	Flange Material			ASTM A182 Gr.F316/316L			
	39	Gasket Material			(Gaskets are Out of scope of Vendor's supply)			
	40	Taps Type	Quantity		-	-		
	41	Taps Size	Connection		-	-		
	42	Taps Orientation			-			
	43							
	44							
PURCHASE	45	Manufacturer			TECNOMATIC			
	46	Model			-			
	47	Purchase Order Number			1724001690			

Notes: (1) Downstream Pressure = atm

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	22/02/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Orifice Plate

CROSSWIND

ROSETTI MARINO

Sheet 9 of 15

Code: 314 Doc. No.: 123A90-DDL-IN-DS-40054 Rev 01

ITEM	Tag	AV-63002/25-FV-038	: Pneumatic Connection Air Supply - 25-FV-038		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001947	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX06	Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	OK
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ITEM	Tag	AV-63002/25-FV-038	: Pneumatic Connection Air Supply - 25-FV-038		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001947	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX06	Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 7.4 TEST DURATION : 12 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
AV-63002	25-FV-038	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-01-24	2025-02-04	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-24T13:09:21.682Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-04T11:41:55.562Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63002/25-FV-038

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:12:44
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	04:42:17 pm

Logger protocol

Protocollo di acquisizione elenco dati

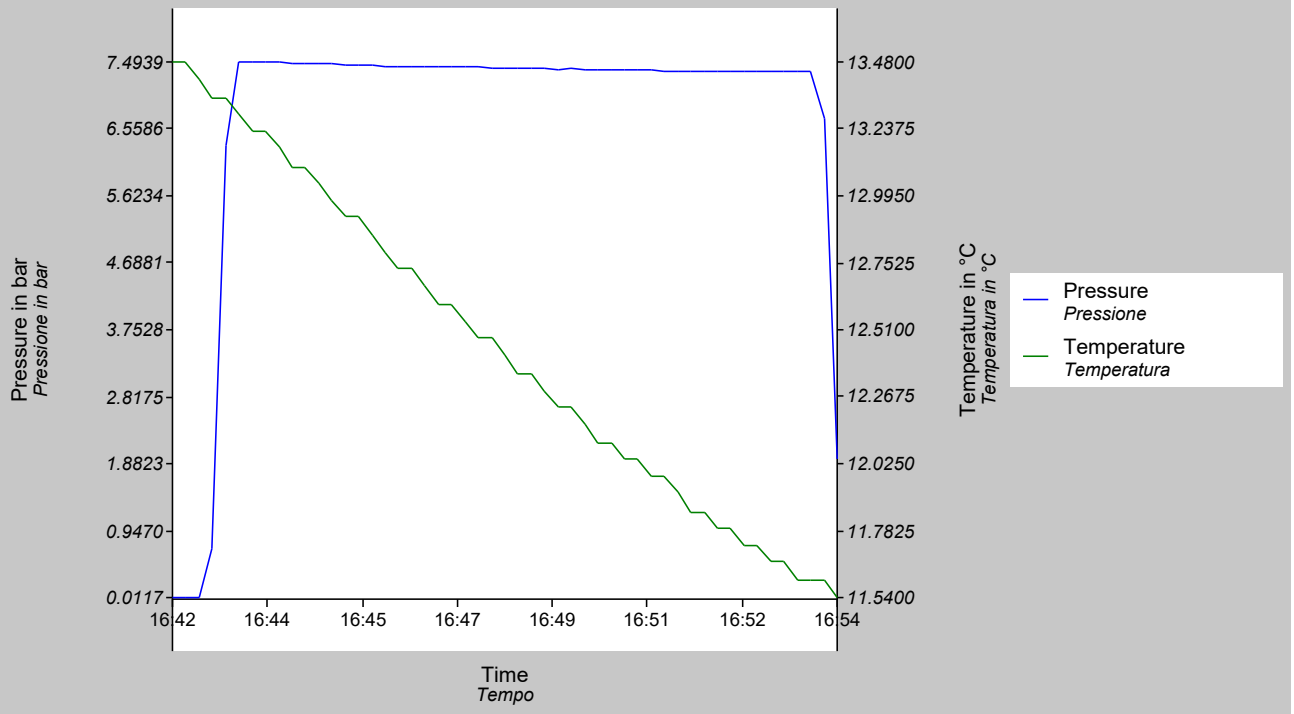
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63002/25-FV-038

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/31/2025 16:42:17.000	0.0117	13.4800
01/31/2025 16:42:32.000	0.0166	13.4800
01/31/2025 16:42:47.000	0.0149	13.4200
01/31/2025 16:43:02.000	0.6832	13.3500
01/31/2025 16:43:17.000	6.3242	13.3500
01/31/2025 16:43:32.000	7.4883	13.2900
01/31/2025 16:43:47.000	7.4939	13.2300
01/31/2025 16:44:02.000	7.4839	13.2300
01/31/2025 16:44:17.000	7.4842	13.1700
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01/31/2025 16:45:17.000	7.4613	12.9800
01/31/2025 16:45:32.000	7.4587	12.9200
01/31/2025 16:45:47.000	7.4497	12.9200
01/31/2025 16:46:02.000	7.4468	12.8500
01/31/2025 16:46:17.000	7.4370	12.7900

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63002/25-FV-038

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/31/2025 16:46:32.000	7.4356	12.7300
01/31/2025 16:46:47.000	7.4341	12.7300
01/31/2025 16:47:02.000	7.4299	12.6700
01/31/2025 16:47:17.000	7.4258	12.6000
01/31/2025 16:47:32.000	7.4191	12.6000
01/31/2025 16:47:47.000	7.4170	12.5400
01/31/2025 16:48:02.000	7.4183	12.4800
01/31/2025 16:48:17.000	7.4117	12.4800
01/31/2025 16:48:32.000	7.4164	12.4200
01/31/2025 16:48:47.000	7.4103	12.3500
01/31/2025 16:49:02.000	7.4020	12.3500
01/31/2025 16:49:17.000	7.4016	12.2900
01/31/2025 16:49:32.000	7.3943	12.2300
01/31/2025 16:49:47.000	7.3963	12.2300
01/31/2025 16:50:02.000	7.3885	12.1700
01/31/2025 16:50:17.000	7.3821	12.1000
01/31/2025 16:50:32.000	7.3886	12.1000
01/31/2025 16:50:47.000	7.3832	12.0400
01/31/2025 16:51:02.000	7.3855	12.0400
01/31/2025 16:51:17.000	7.3764	11.9800
01/31/2025 16:51:32.000	7.3717	11.9800
01/31/2025 16:51:47.000	7.3714	11.9200
01/31/2025 16:52:02.000	7.3684	11.8500
01/31/2025 16:52:17.000	7.3613	11.8500
01/31/2025 16:52:32.000	7.3545	11.7900
01/31/2025 16:52:47.000	7.3614	11.7900
01/31/2025 16:53:02.000	7.3569	11.7300
01/31/2025 16:53:17.000	7.3594	11.7300
01/31/2025 16:53:32.000	7.3554	11.6700
01/31/2025 16:53:47.000	7.3574	11.6700
01/31/2025 16:54:02.000	7.3604	11.6000
01/31/2025 16:54:17.000	7.3614	11.6000
01/31/2025 16:54:32.000	6.7070	11.6000
01/31/2025 16:54:47.000	1.9403	11.5400

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

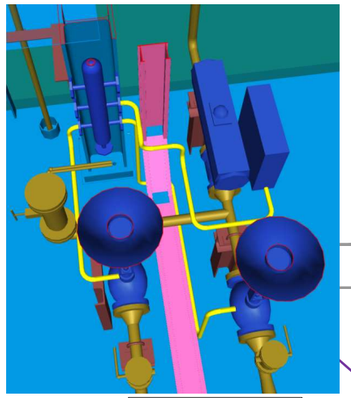
ROSETTI MARINO

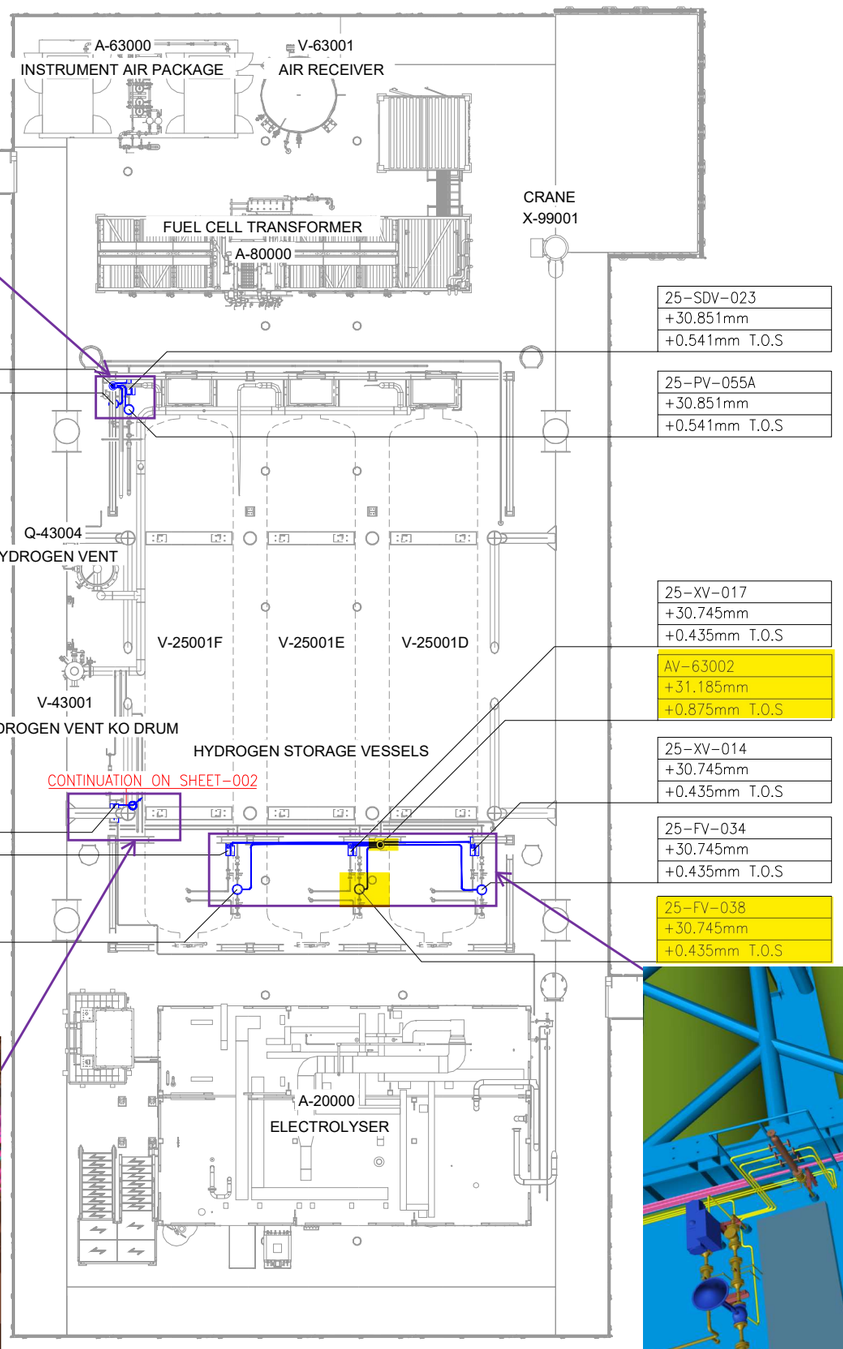
Sh. 4 of 4 REV. 00 01 02 03 04 — X X X X X

								DATA TUBING									FROM AREA					TO AREA					
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/25-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26 PT 002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/26-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~10~~	~~17,7~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26 PT 055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/26-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80026~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80026~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~60-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DD

DRAWING NO. 12390-DDL-IN-DL-40085

REV. 01





AV-63011
+31.185mm
+0.875mm T.O.S

25-PV-055B
+30.851mm
+0.541mm T.O.S

25-SDV-023
+30.851mm
+0.541mm T.O.S

25-PV-055A
+30.851mm
+0.541mm T.O.S

25-XV-017
+30.745mm
+0.435mm T.O.S

AV-63002
+31.185mm
+0.875mm T.O.S

25-XV-014
+30.745mm
+0.435mm T.O.S

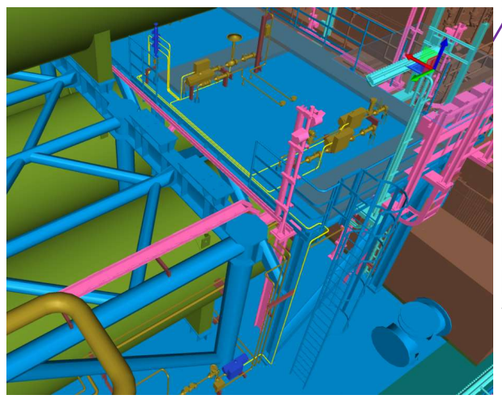
25-FV-034
+30.745mm
+0.435mm T.O.S

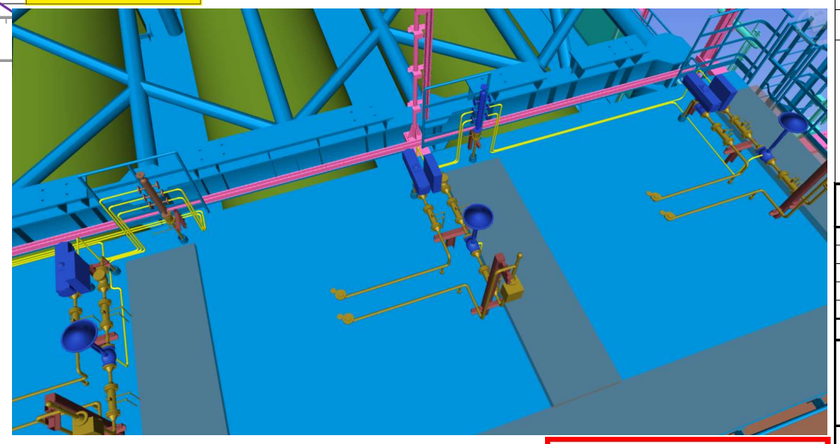
25-FV-038
+30.745mm
+0.435mm T.O.S

64-SDV-001
+31.438mm
+1.128mm T.O.S

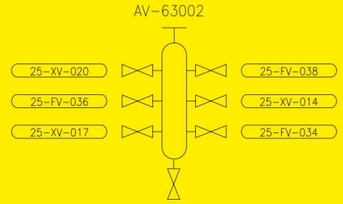
25-XV-020
+30.745mm
+0.435mm T.O.S

25-FV-036
+30.745mm
+0.435mm T.O.S

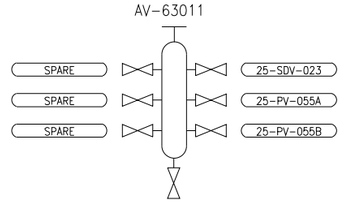


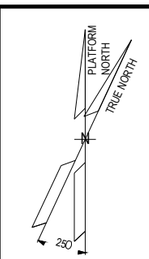


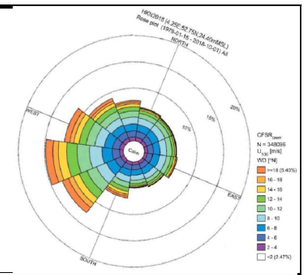
AV-63002



AV-63011







NOTES

1) TUBING ROUTING > 2m IS SHOWN AND IT IS INDICATIVE ONLY.
TUBING ROUTING SHALL BE FINALIZED DURING CONSTRUCTION ACTIVITIES.

LEGEND

- AIR DISTRIBUTION POT
- CONTROL VALVE
- ON-OFF VALVE
- TUBING
- TUBING GOING UP
- TUBING GOING DOWN

HOLDS

REFERENCE DOCUMENTS

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/02/24	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT TUBING LAYOUT
ELEVATION 30.310 m

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40085**

REV.:	DATE:	SIGNATURE:
1_C	12/12/24	C.Pilato

ROSETTI MARINO SpA

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK				SCALE 1:100
DRAWN DRAWN_BY	CHECKED CHECKED_BY	APPROVED APPROVED_BY	DATE DD/MM/YY	
A1	DRAWING NO. 123A90-DDL-IN-DL-40085		SHEET 001	REV. 01

File Name : 12390-DDL-IN-DL-40085_Rev.01

UPPER DECK
SCALE: 1:1

VIEW EL. 29310mm to 33740mm

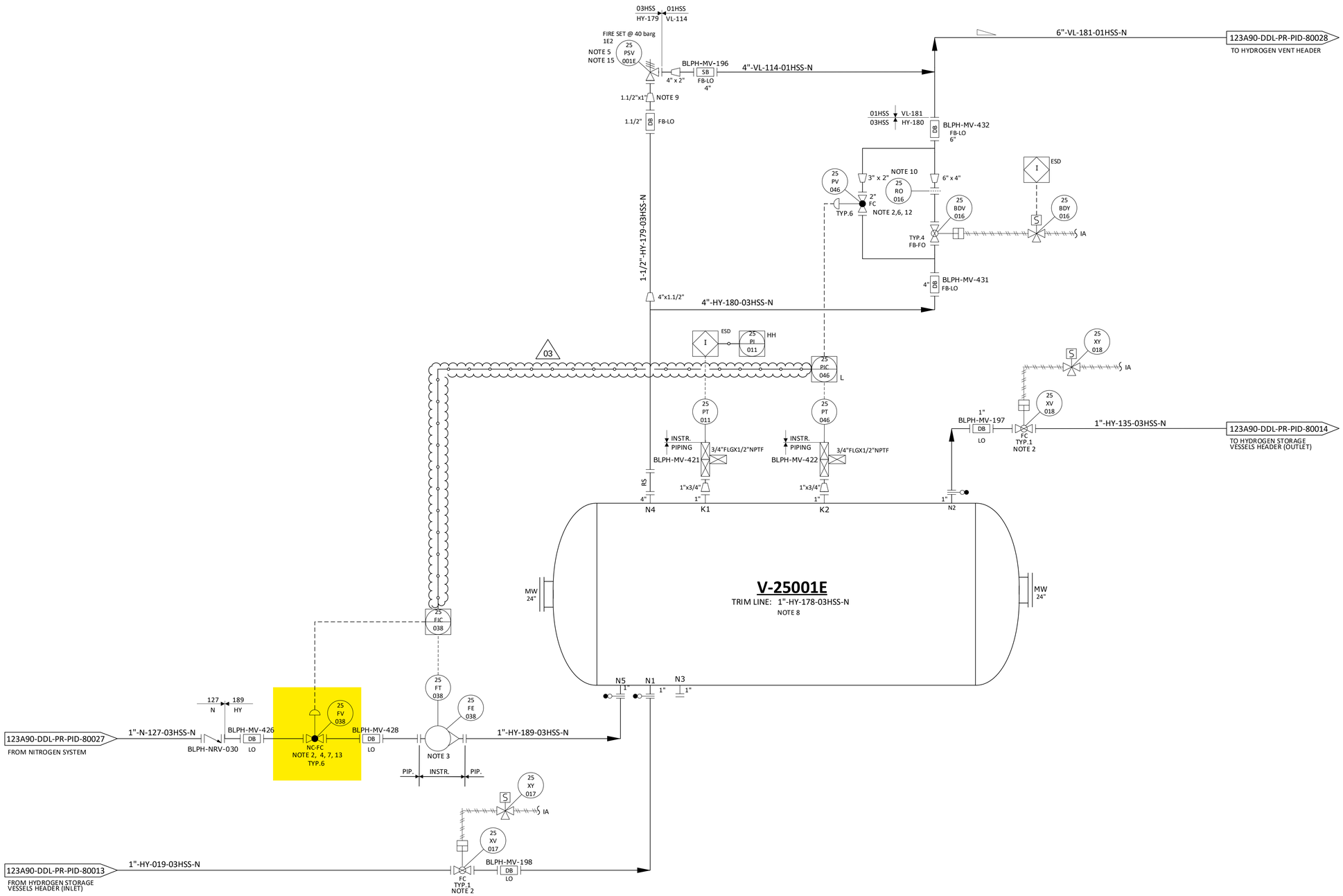
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

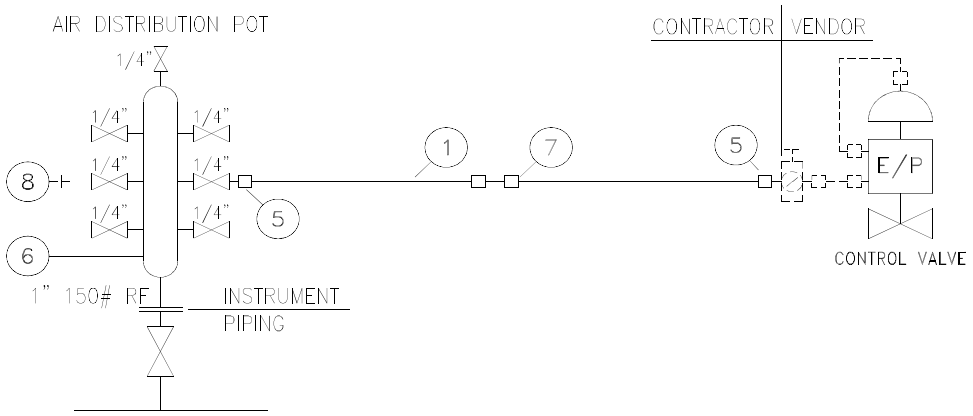
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PNEUMATIC HOOK-UP FOR CONTROL VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

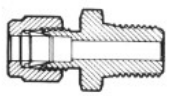
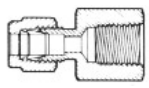
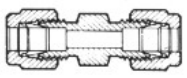


	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-038
6	25-FV-036
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
18	
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20	
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NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
27										
28										
29										
30										
31										
32										
33										
34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Accredited Calibration Laboratory

LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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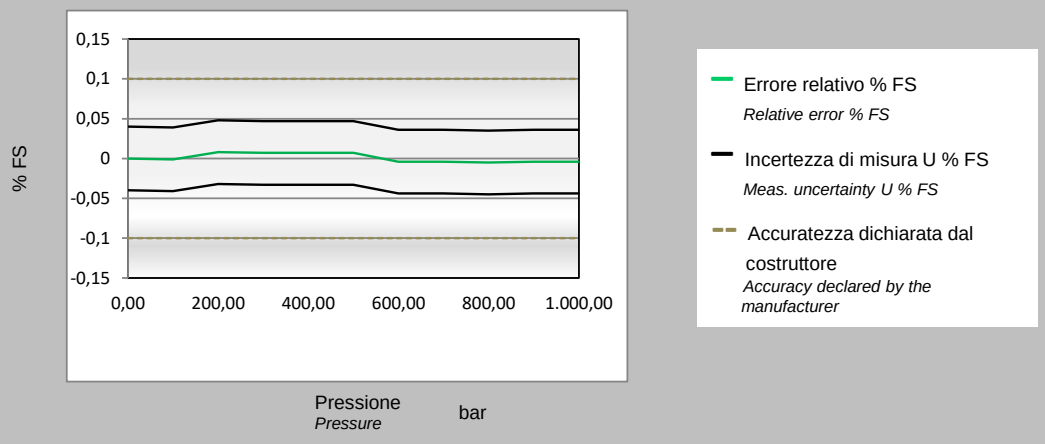
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LAT N° 114

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ITEM	Tag	AV-63012/25-PV-046	: Pneumatic Connection Air Supply - 25-PV-046		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001982	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX06	Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	OK
9	Tubing/Piping tray checked.	OK
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	NA
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	AV-63012/25-PV-046	: Pneumatic Connection Air Supply - 25-PV-046		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001982	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX06	Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 9 TEST DURATION : 12 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
AV-63012	25-PV-046	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	☒ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-14	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-14T07:38:11.045Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-17T16:50:47.257Z	

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Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
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I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Calibration Centre
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LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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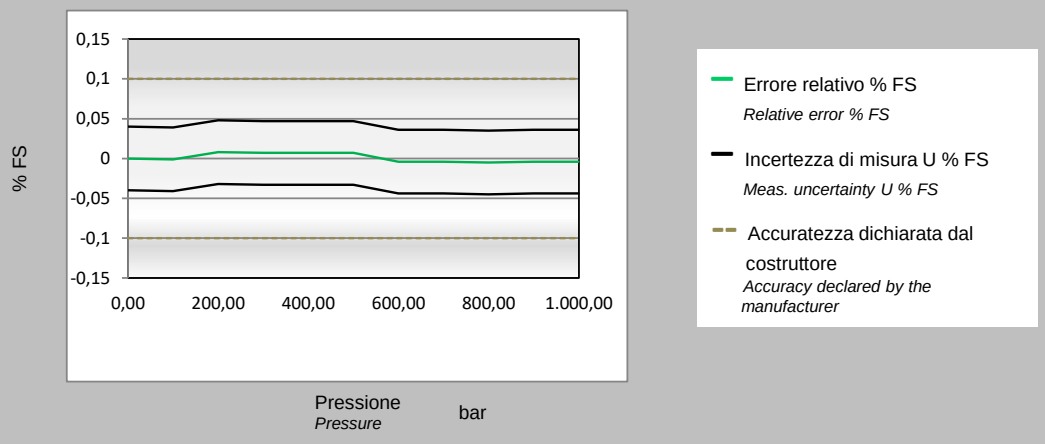
Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Logger protocol

Protocollo di acquisizione elenco dati

	Log no. *N. elenco dati*	AV-63012/25-PV-046

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:35
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	01:20:06 pm

Logger protocol

Protocollo di acquisizione elenco dati

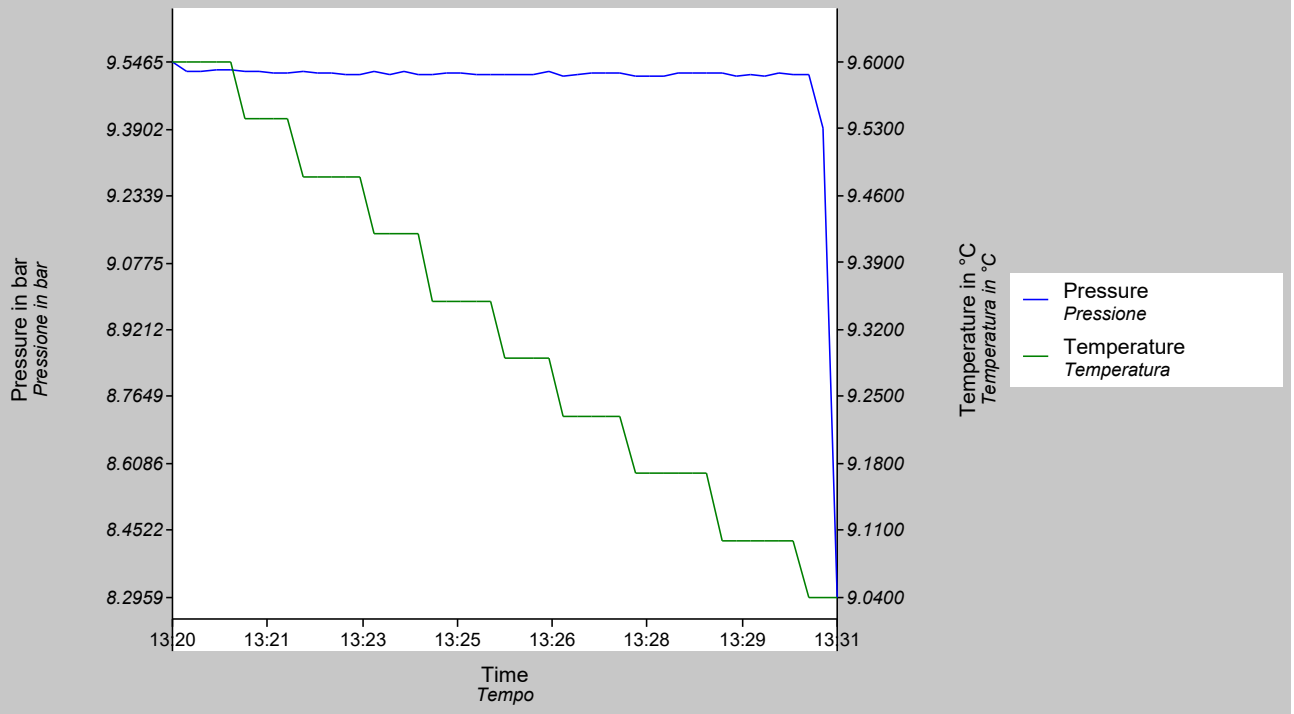
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Log no. *N. elenco dati*	AV-63012/25-PV-046

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/15/2025 13:20:06.000	9.5465	9.6000
02/15/2025 13:20:21.000	9.5262	9.6000
02/15/2025 13:20:36.000	9.5253	9.6000
02/15/2025 13:20:51.000	9.5264	9.6000
02/15/2025 13:21:06.000	9.5272	9.6000
02/15/2025 13:21:21.000	9.5256	9.5400
02/15/2025 13:21:36.000	9.5239	9.5400
02/15/2025 13:21:51.000	9.5220	9.5400
02/15/2025 13:22:06.000	9.5203	9.5400
02/15/2025 13:22:21.000	9.5260	9.4800
02/15/2025 13:22:36.000	9.5207	9.4800
02/15/2025 13:22:51.000	9.5215	9.4800
02/15/2025 13:23:06.000	9.5163	9.4800
02/15/2025 13:23:21.000	9.5189	9.4800
02/15/2025 13:23:36.000	9.5242	9.4200
02/15/2025 13:23:51.000	9.5182	9.4200
02/15/2025 13:24:06.000	9.5227	9.4200

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63012/25-PV-046

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/15/2025 13:24:21.000	9.5161	9.4200
02/15/2025 13:24:36.000	9.5162	9.3500
02/15/2025 13:24:51.000	9.5197	9.3500
02/15/2025 13:25:06.000	9.5197	9.3500
02/15/2025 13:25:21.000	9.5184	9.3500
02/15/2025 13:25:36.000	9.5153	9.3500
02/15/2025 13:25:51.000	9.5185	9.2900
02/15/2025 13:26:06.000	9.5183	9.2900
02/15/2025 13:26:21.000	9.5184	9.2900
02/15/2025 13:26:36.000	9.5247	9.2900
02/15/2025 13:26:51.000	9.5144	9.2300
02/15/2025 13:27:06.000	9.5186	9.2300
02/15/2025 13:27:21.000	9.5211	9.2300
02/15/2025 13:27:36.000	9.5200	9.2300
02/15/2025 13:27:51.000	9.5206	9.2300
02/15/2025 13:28:06.000	9.5152	9.1700
02/15/2025 13:28:21.000	9.5131	9.1700
02/15/2025 13:28:36.000	9.5143	9.1700
02/15/2025 13:28:51.000	9.5190	9.1700
02/15/2025 13:29:06.000	9.5190	9.1700
02/15/2025 13:29:21.000	9.5193	9.1700
02/15/2025 13:29:36.000	9.5192	9.1000
02/15/2025 13:29:51.000	9.5138	9.1000
02/15/2025 13:30:06.000	9.5168	9.1000
02/15/2025 13:30:21.000	9.5138	9.1000
02/15/2025 13:30:36.000	9.5193	9.1000
02/15/2025 13:30:51.000	9.5186	9.1000
02/15/2025 13:31:06.000	9.5176	9.0400
02/15/2025 13:31:21.000	9.3925	9.0400
02/15/2025 13:31:36.000	8.2959	9.0400

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

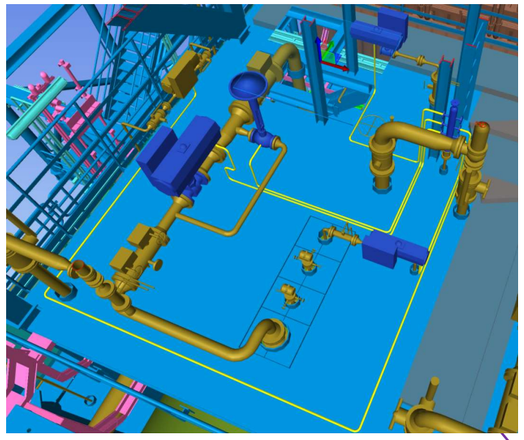
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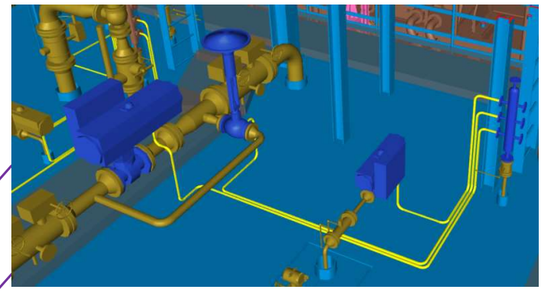
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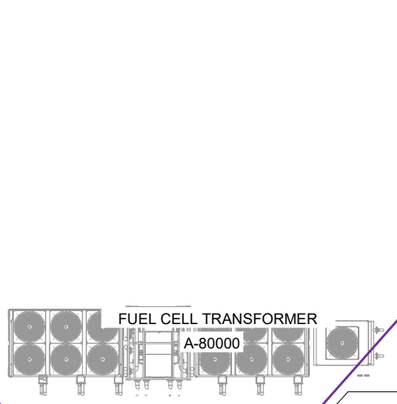
						DATA TUBING											FROM AREA					TO AREA							
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N_2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-SDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/26-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/26-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~10~~	~~17,7~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26-PT-055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/26-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80026~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80026~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~60-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection

DRAWING NO. 123A90-DDL-IN-DL-40085

REV. 01







CRANE
X-99001

AV-63012
+35.085mm
+4.775mm T.O.S

AV-63004
+35.085mm
+4.775mm T.O.S

25-XV-015
+34.479mm
+4.169mm T.O.S

25-PV-043
+34.740mm
+4.430mm T.O.S

25-BDV-013
+34.740mm
+4.430mm T.O.S

25-XV-018
+34.508mm
+4.198mm T.O.S

25-PV-046
+34.740mm
+4.430mm T.O.S

25-XV-008
+35.245mm
+4.935mm T.O.S

AV-63001
+35.834mm
+5.524mm T.O.S

25-XV-011
+35.245mm
+4.935mm T.O.S

25-FV-033
+35.245mm
+4.935mm T.O.S

25-FV-032
+35.245mm
+4.935mm T.O.S

25-BDV-022
+34.740mm
+4.430mm T.O.S

AV-63006
+35.085mm
+4.775mm T.O.S

80-XV-001
+34.508mm
+4.198mm T.O.S

25-PV-049
+34.740mm
+4.430mm T.O.S

25-BDV-019
+34.740mm
+4.430mm T.O.S

25-XV-021
+34.479mm
+4.169mm T.O.S

25-BDV-016
+34.740mm
+4.430mm T.O.S

Q-43004
HYDROGEN VENT

V-25001A V-25001B V-25001C

HYDROGEN STORAGE VESSELS

REFER SHEET-001

AV-63010
+35.834mm
+5.524mm T.O.S

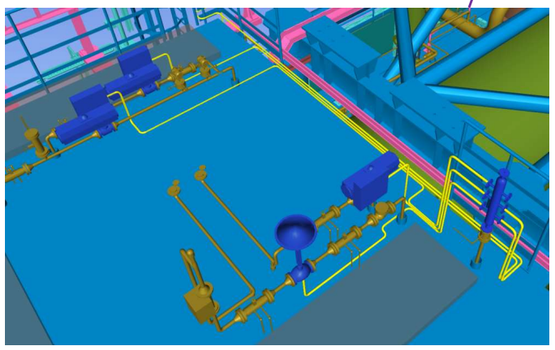
25-XV-024
+35.140mm
+4.830mm T.O.S

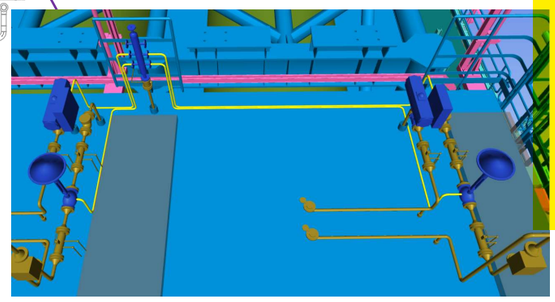
25-SDV-001
+35.140mm
+4.830mm T.O.S

25-XV-004
+35.245mm
+4.935mm T.O.S

25-FV-031
+35.245mm
+4.935mm T.O.S

A-20000
ELECTROLYSER



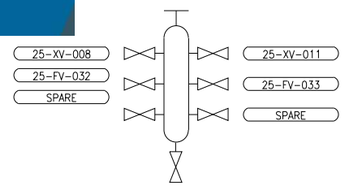


UPPER DECK

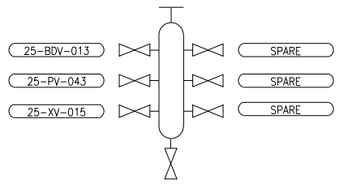
SCALE: 1:1

VIEW EL. 33740mm to 36500mm

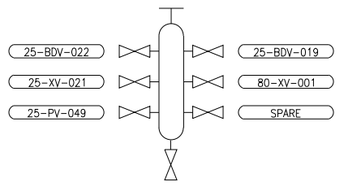
AV-63001



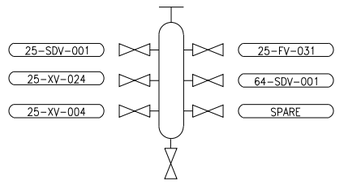
AV-63004



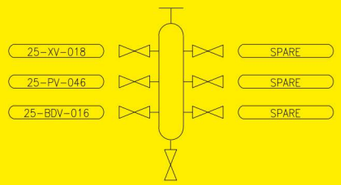
AV-63006

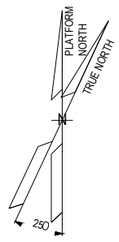


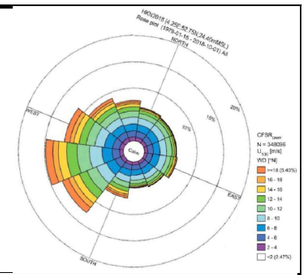
AV-63010



AV-63012







NOTES

1) TUBING ROUTING > 2m IS SHOWN AND IT IS INDICATIVE ONLY.
TUBING ROUTING SHALL BE FINALIZED DURING CONSTRUCTION ACTIVITIES.

LEGEND

- AIR DISTRIBUTION POT
- CONTROL VALVE
- ON-OFF VALVE
- TUBING
- TUBING GOING UP
- TUBING GOING DOWN

HOLDS

REFERENCE DOCUMENTS

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/02/24	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT TUBING LAYOUT
ELEVATION 30.310 m

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40085**

REV.:	DATE:	SIGNATURE:
1_C	12/12/24	C.Pilato

ROSETTI MARINO SpA

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN DRAWN_BY	CHECKED CHECKED_BY	APPROVED APPROVED_BY	DATE DD/MM/YY
A1	DRAWING NO. 123A90-DDL-IN-DL-40085	SHEET 002	REV. 01

File Name : 12390-DDL-IN-DL-40085_Rev.01

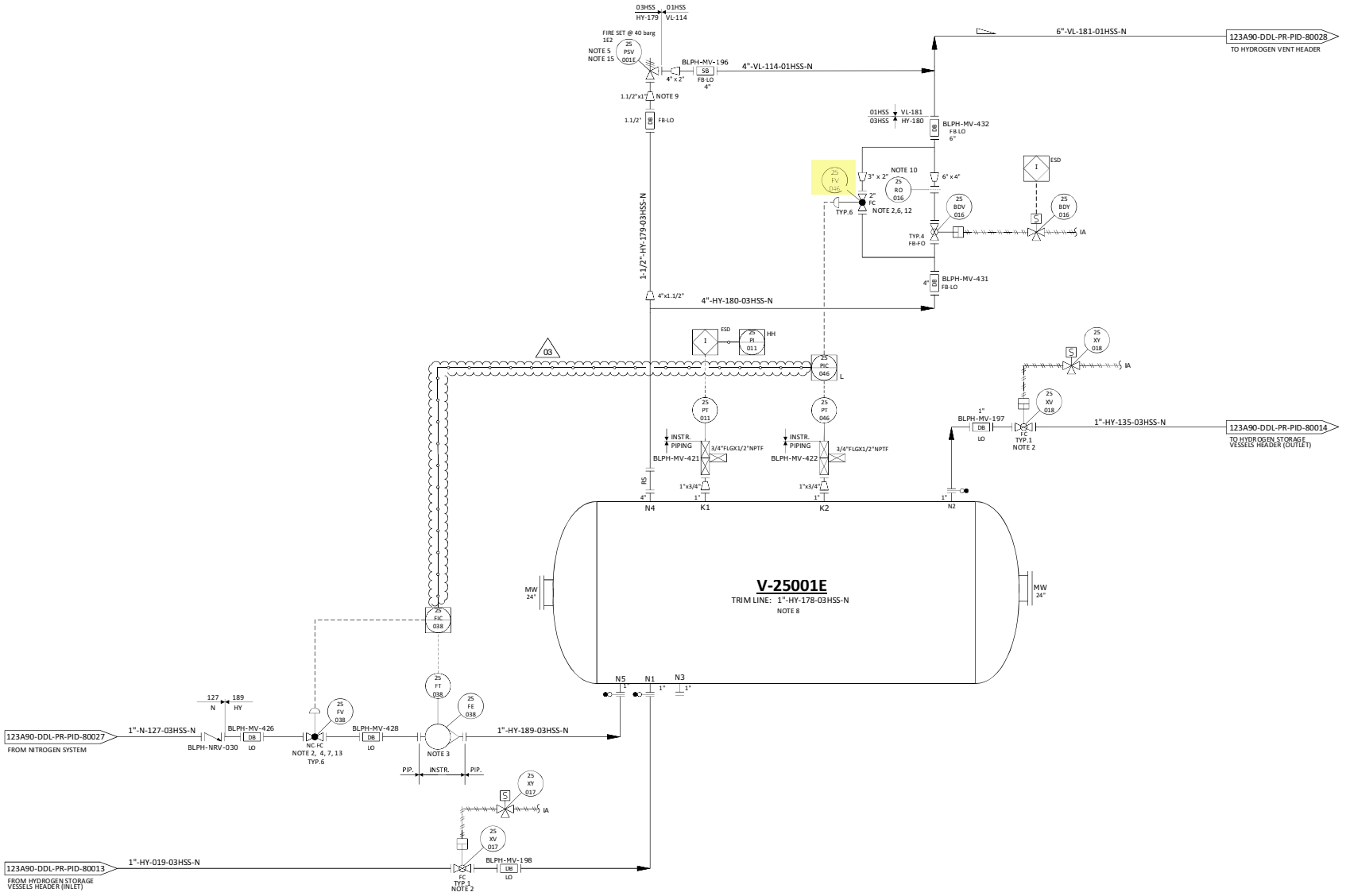
DRAWING NO. DRAWING_NO.

REV. REV.

V-25001_E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

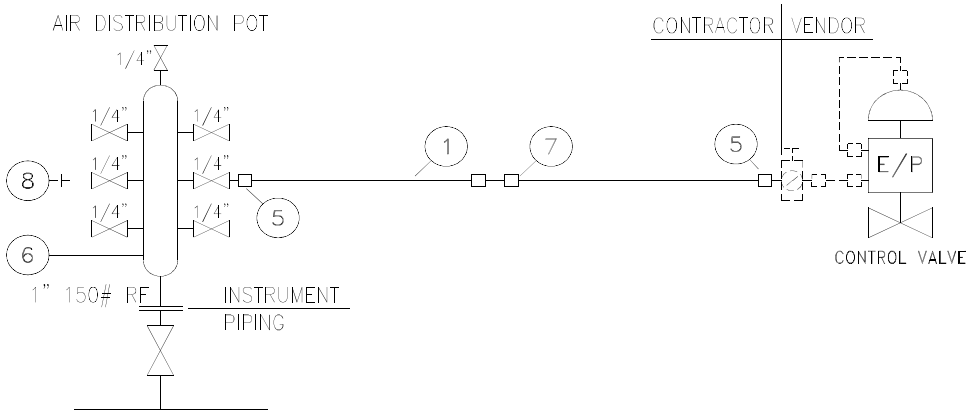
File Name : FILE_NAME

PNEUMATIC HOOK-UP FOR CONTROL VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

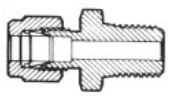
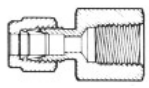
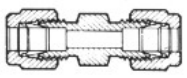


	INSTRUMENT TAG
1	25-FV-031
2	25-FV-032
3	25-FV-033
4	25-FV-034
5	25-FV-038
6	25-FV-036
7	25-PV-035
8	25-PV-037
9	25-PV-040
10	25-PV-043
11	25-PV-046
12	25-PV-049
13	25-PV-055A
14	25-PV-055B
15	64-PV-031A
16	64-PV-031B
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
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30										
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28										
29										
30										
31										
32										
33										
34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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ITEM	Tag	AV-63012/25-BDV-016	: Pneumatic Connection Air Supply - 25-BDV-016		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10001983	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX06	Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	PL
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	OK
9	Tubing/Piping tray checked.	OK
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	NA
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	AV-63012/25-BDV-016	: Pneumatic Connection Air Supply - 25-BDV-016			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10001983	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form CJX06	Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 9 TEST DURATION : 12 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
AV-63012	25-BDV-016	●					●	1/2" OD x Thk. 0,049

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-14	2025-02-17	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-14T07:38:21.917Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-17T16:49:08.147Z	

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www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
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LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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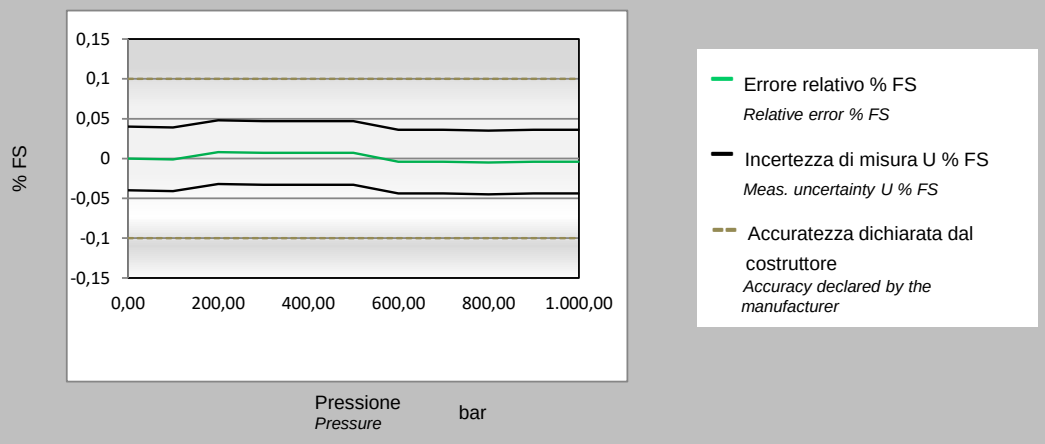
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Logger protocol

Protocollo di acquisizione elenco dati

	Log no. *N. elenco dati*	AV-63012/25-BDV-016

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:35
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	01:20:06 pm

Logger protocol

Protocollo di acquisizione elenco dati

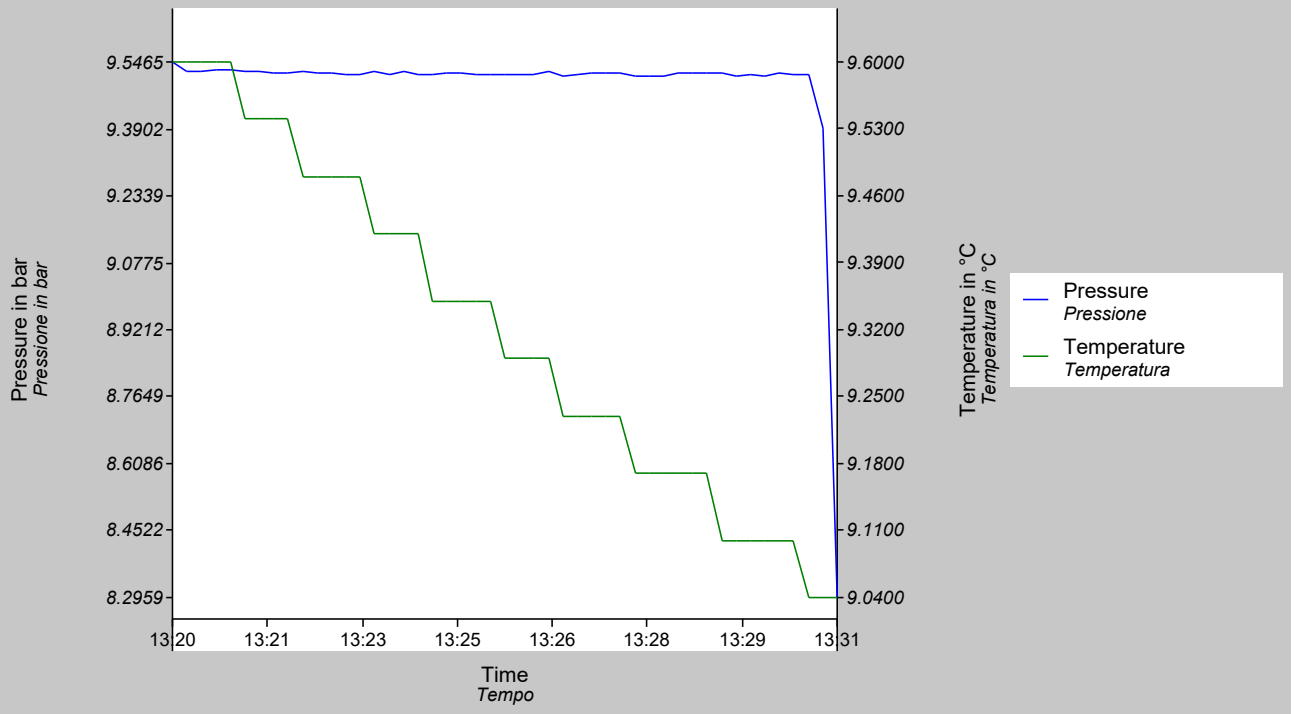
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63012/25-BDV-016

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/15/2025 13:20:06.000	9.5465	9.6000
02/15/2025 13:20:21.000	9.5262	9.6000
02/15/2025 13:20:36.000	9.5253	9.6000
02/15/2025 13:20:51.000	9.5264	9.6000
02/15/2025 13:21:06.000	9.5272	9.6000
02/15/2025 13:21:21.000	9.5256	9.5400
02/15/2025 13:21:36.000	9.5239	9.5400
02/15/2025 13:21:51.000	9.5220	9.5400
02/15/2025 13:22:06.000	9.5203	9.5400
02/15/2025 13:22:21.000	9.5260	9.4800
02/15/2025 13:22:36.000	9.5207	9.4800
02/15/2025 13:22:51.000	9.5215	9.4800
02/15/2025 13:23:06.000	9.5163	9.4800
02/15/2025 13:23:21.000	9.5189	9.4800
02/15/2025 13:23:36.000	9.5242	9.4200
02/15/2025 13:23:51.000	9.5182	9.4200
02/15/2025 13:24:06.000	9.5227	9.4200

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63012/25-BDV-016

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/15/2025 13:24:21.000	9.5161	9.4200
02/15/2025 13:24:36.000	9.5162	9.3500
02/15/2025 13:24:51.000	9.5197	9.3500
02/15/2025 13:25:06.000	9.5197	9.3500
02/15/2025 13:25:21.000	9.5184	9.3500
02/15/2025 13:25:36.000	9.5153	9.3500
02/15/2025 13:25:51.000	9.5185	9.2900
02/15/2025 13:26:06.000	9.5183	9.2900
02/15/2025 13:26:21.000	9.5184	9.2900
02/15/2025 13:26:36.000	9.5247	9.2900
02/15/2025 13:26:51.000	9.5144	9.2300
02/15/2025 13:27:06.000	9.5186	9.2300
02/15/2025 13:27:21.000	9.5211	9.2300
02/15/2025 13:27:36.000	9.5200	9.2300
02/15/2025 13:27:51.000	9.5206	9.2300
02/15/2025 13:28:06.000	9.5152	9.1700
02/15/2025 13:28:21.000	9.5131	9.1700
02/15/2025 13:28:36.000	9.5143	9.1700
02/15/2025 13:28:51.000	9.5190	9.1700
02/15/2025 13:29:06.000	9.5190	9.1700
02/15/2025 13:29:21.000	9.5193	9.1700
02/15/2025 13:29:36.000	9.5192	9.1000
02/15/2025 13:29:51.000	9.5138	9.1000
02/15/2025 13:30:06.000	9.5168	9.1000
02/15/2025 13:30:21.000	9.5138	9.1000
02/15/2025 13:30:36.000	9.5193	9.1000
02/15/2025 13:30:51.000	9.5186	9.1000
02/15/2025 13:31:06.000	9.5176	9.0400
02/15/2025 13:31:21.000	9.3925	9.0400
02/15/2025 13:31:36.000	8.2959	9.0400

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

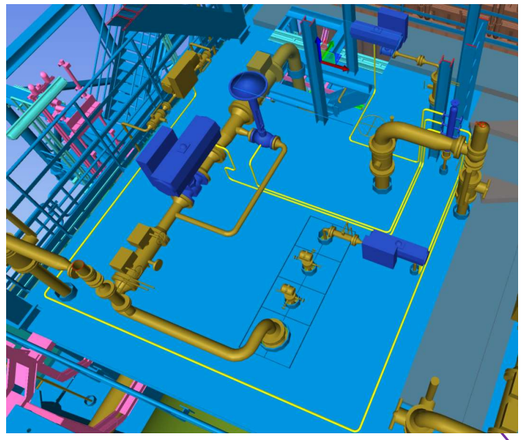
ROSETTI MARINO

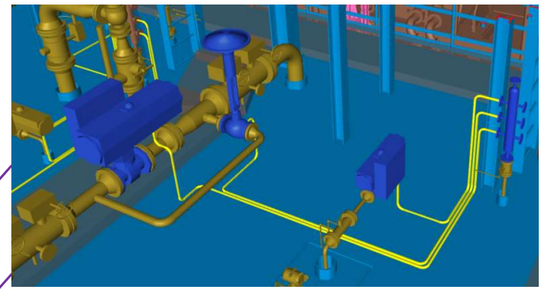
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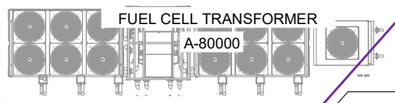
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POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/26-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/26-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~10~~	~~17,7~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~26-PT-055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/26-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80026~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	**0,5**	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80026~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~60-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air

DRAWING NO. 12390-DDL-IN-DL-40085

REV. 01







CRANE
X-99001

AV-63012
+35.085mm
+4.775mm T.O.S

25-BDV-022
+34.740mm
+4.430mm T.O.S

AV-63004
+35.085mm
+4.775mm T.O.S

25-XV-015
+34.479mm
+4.169mm T.O.S

AV-63006
+35.085mm
+4.775mm T.O.S

80-XV-001
+34.508mm
+4.198mm T.O.S

25-PV-043
+34.740mm
+4.430mm T.O.S

25-PV-049
+34.740mm
+4.430mm T.O.S

25-BDV-019
+34.740mm
+4.430mm T.O.S

25-BDV-013
+34.740mm
+4.430mm T.O.S

Q-43004
HYDROGEN VENT

25-XV-018
+34.508mm
+4.198mm T.O.S

25-XV-021
+34.479mm
+4.169mm T.O.S

25-PV-046
+34.740mm
+4.430mm T.O.S

25-BDV-016
+34.740mm
+4.430mm T.O.S

V-25001A V-25001B V-25001C

25-XV-008
+35.245mm
+4.935mm T.O.S

AV-63001
+35.834mm
+5.524mm T.O.S

REFER SHEET-001

HYDROGEN STORAGE VESSELS

AV-63010
+35.834mm
+5.524mm T.O.S

25-XV-011
+35.245mm
+4.935mm T.O.S

25-XV-024
+35.140mm
+4.830mm T.O.S

25-SDV-001
+35.140mm
+4.830mm T.O.S

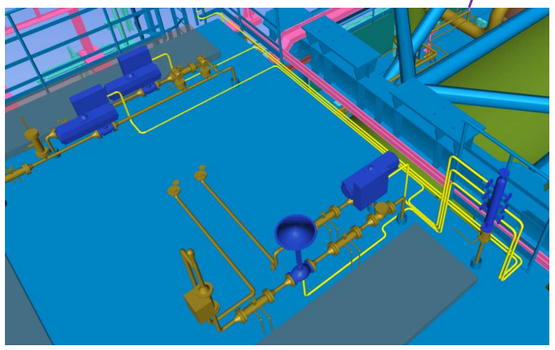
25-FV-033
+35.245mm
+4.935mm T.O.S

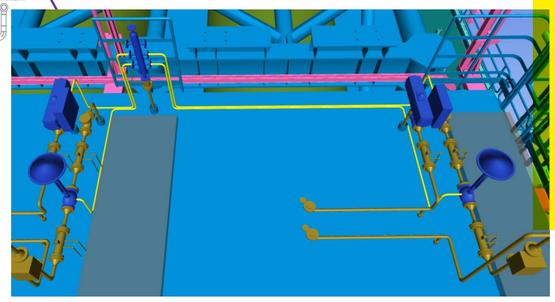
25-XV-004
+35.245mm
+4.935mm T.O.S

25-FV-031
+35.245mm
+4.935mm T.O.S

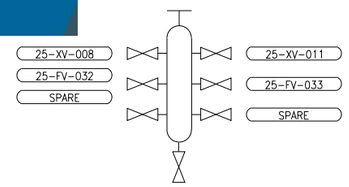
25-FV-032
+35.245mm
+4.935mm T.O.S

A-20000
ELECTROLYSER

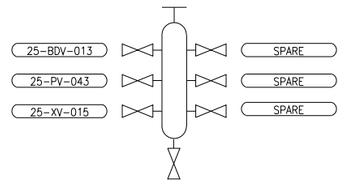




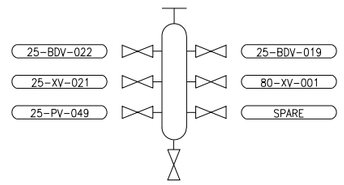
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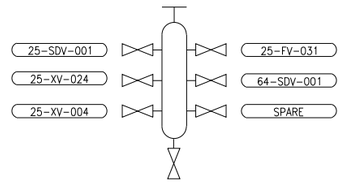
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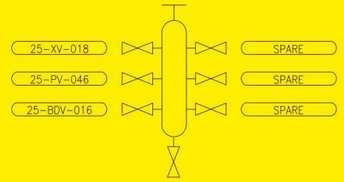
AV-63006



AV-63010



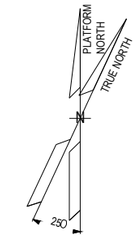
AV-63012

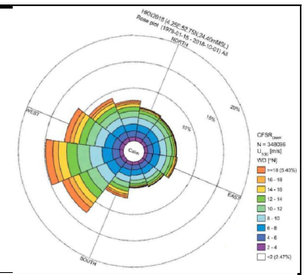


UPPER DECK

SCALE: 1:1

VIEW EL. 33740mm to 36500mm





NOTES

1) TUBING ROUTING > 2m IS SHOWN AND IT IS INDICATIVE ONLY.
TUBING ROUTING SHALL BE FINALIZED DURING CONSTRUCTION ACTIVITIES.

LEGEND

- AIR DISTRIBUTION POT
- CONTROL VALVE
- ON-OFF VALVE
- TUBING
- TUBING GOING UP
- TUBING GOING DOWN

HOLDS

REFERENCE DOCUMENTS

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/02/24	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT TUBING LAYOUT
ELEVATION 30.310 m

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40085**

REV.:	DATE:	SIGNATURE:
1_C	12/12/24	C.Pilato

ROSETTI MARINO SpA

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK				SCALE 1:100
DRAWN DRAWN_BY	CHECKED CHECKED_BY	APPROVED APPROVED_BY		DATE DD/MM/YY
A1	DRAWING NO. 123A90-DDL-IN-DL-40085		SHEET 002	REV. 01

File Name : 12390-DDL-IN-DL-40085_Rev.01

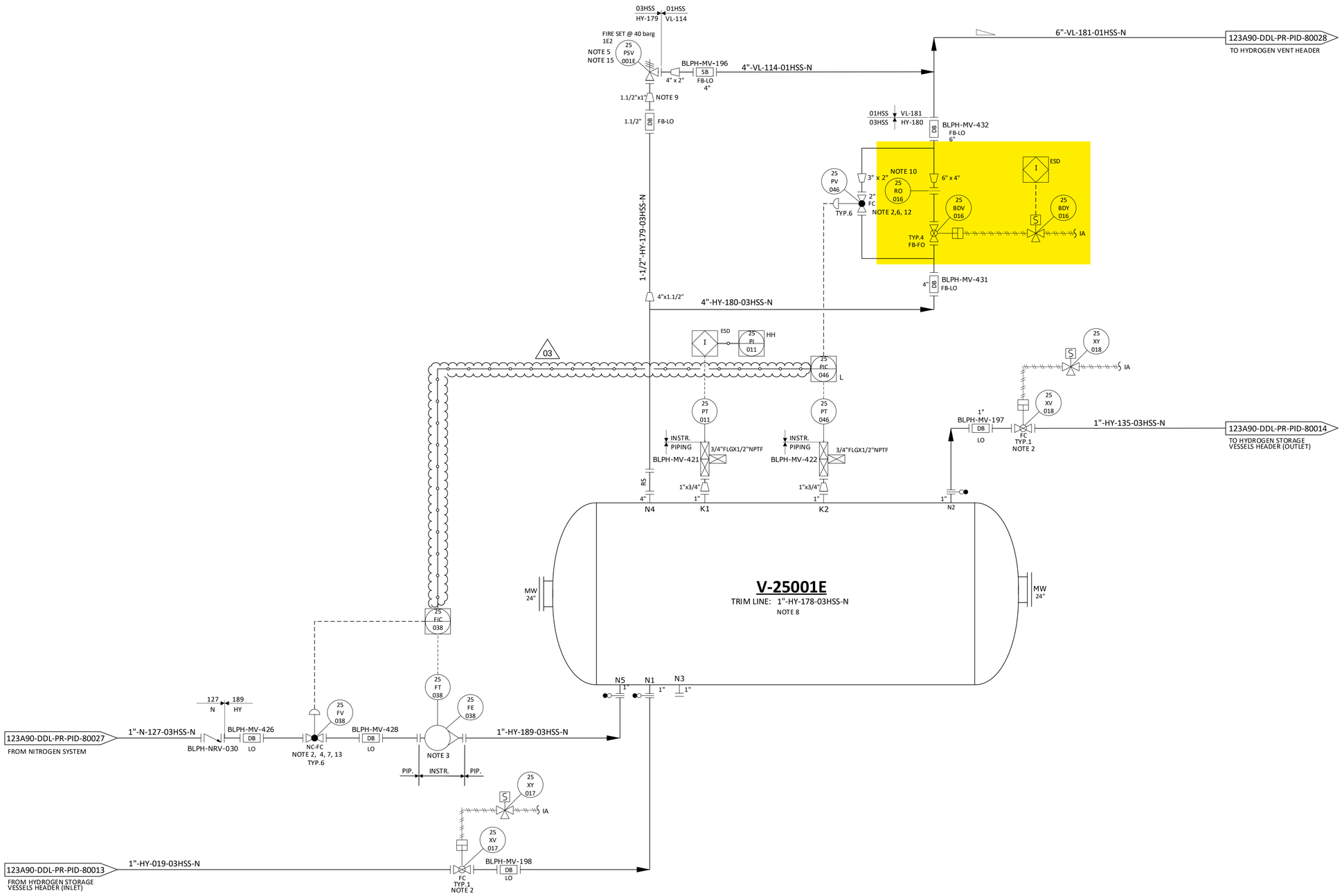
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

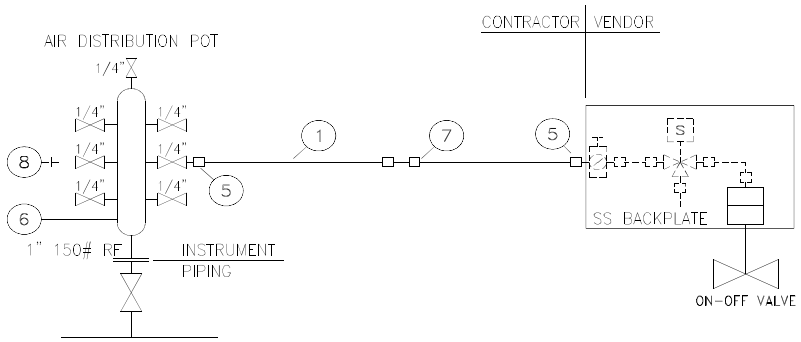
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PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

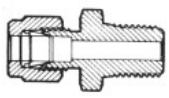
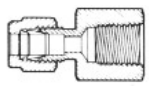
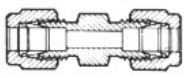


	INSTRUMENT TAG
1	25-BDV-022
2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
19										
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31										
32										
33										
34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

This document undergoes an issuance cycle within EDMS "Fusionlive".
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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

This document undergoes an issuance cycle within EDMS "Fusionlive".
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Section 7 MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC & discipline : M

Mechanical	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
V-25001E	Hydrogen storage vessel A	ONSHORE	C10002391	CDX01	100	2025-01-30	RFC 1

ITEM	Tag	V-25001E	: Hydrogen storage vessel A			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10002391		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Mechanical	Form	CDX01 Storage Tank

1	Check that the nameplate details are correct.	OK
2	Check the location, elevation, orientation and that the vessel is level.	PL
3	Check that the holding down arrangements are correct.	PL
4	Check for any installation damage.	OK
5	Check the vessel internals are as per approved drawings.	PL
6	Check the vessel internally for cleanliness.	PL
7	Check all platforms and ladders are installed as per approved drawings. Also man ways are accessible and suitable for operation.	PL
8	Check out the painting, insulation and the lining for damage.	PL
9	Check the earthing and bonding are as per Project Specifications.	PL
10	Check that the pipe supports are in accordance with the approved design.	NA
11	Check the disconnected pipework flanges against the nozzle flanges for correct alignment.	Note
12	Atmospheric Transportable Drain Vessel to be equipped with Breathing / Vacuum breaker valve.	NA
13	Check Flame Arrestor (if any).	NA
14	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Point 11 is ongoing with flange management of the TP connecting to Vessel.

	Performed by	☒ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Mattia Biaggioni	
Date	2025-01-21	2025-01-30	
Signature	Digitaly signed by Emanuele Delfino 2025-01-21T05:40:15.694Z	Digitaly signed by Mattia Biaggioni 2025-01-30T15:58:56.364Z	

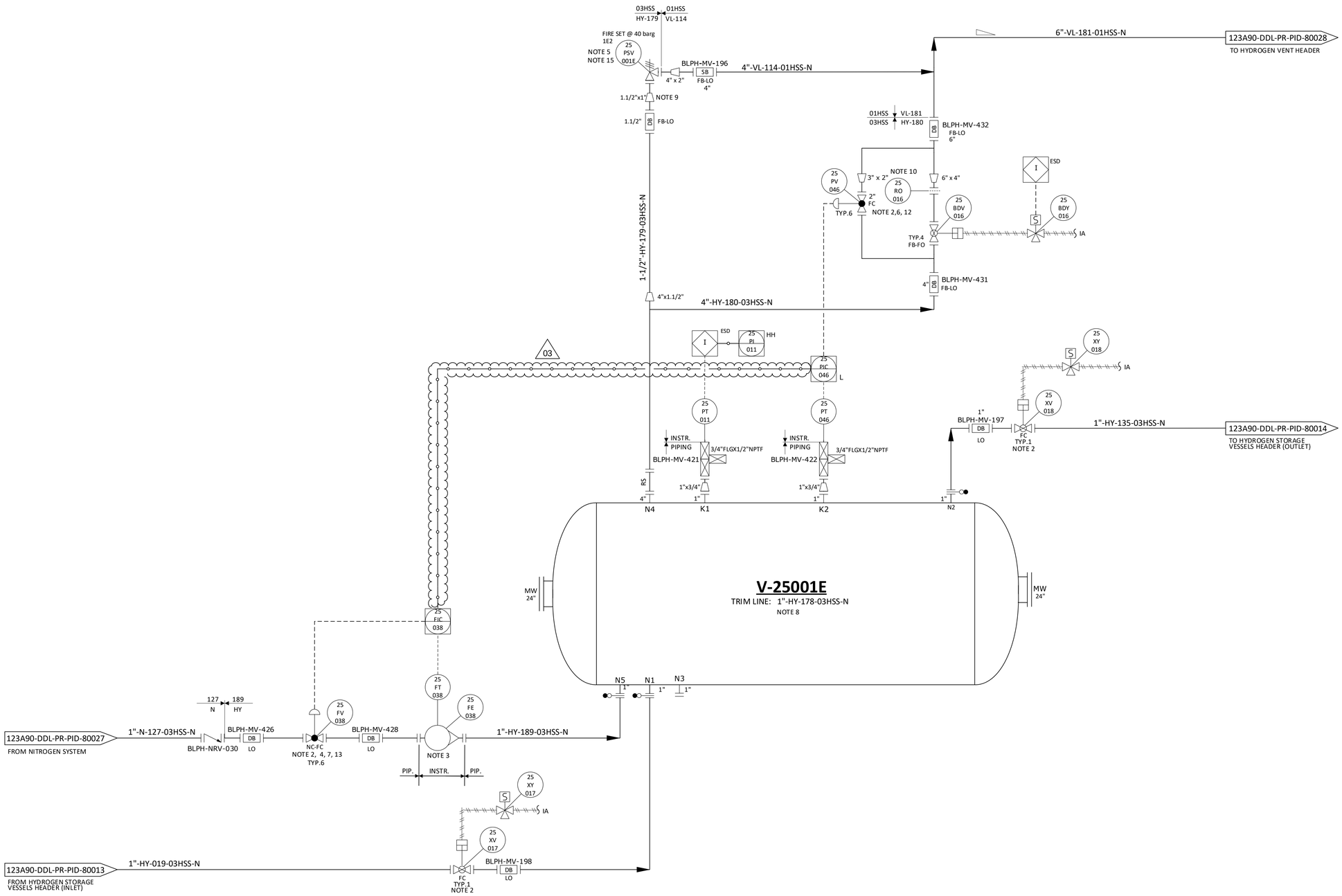
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

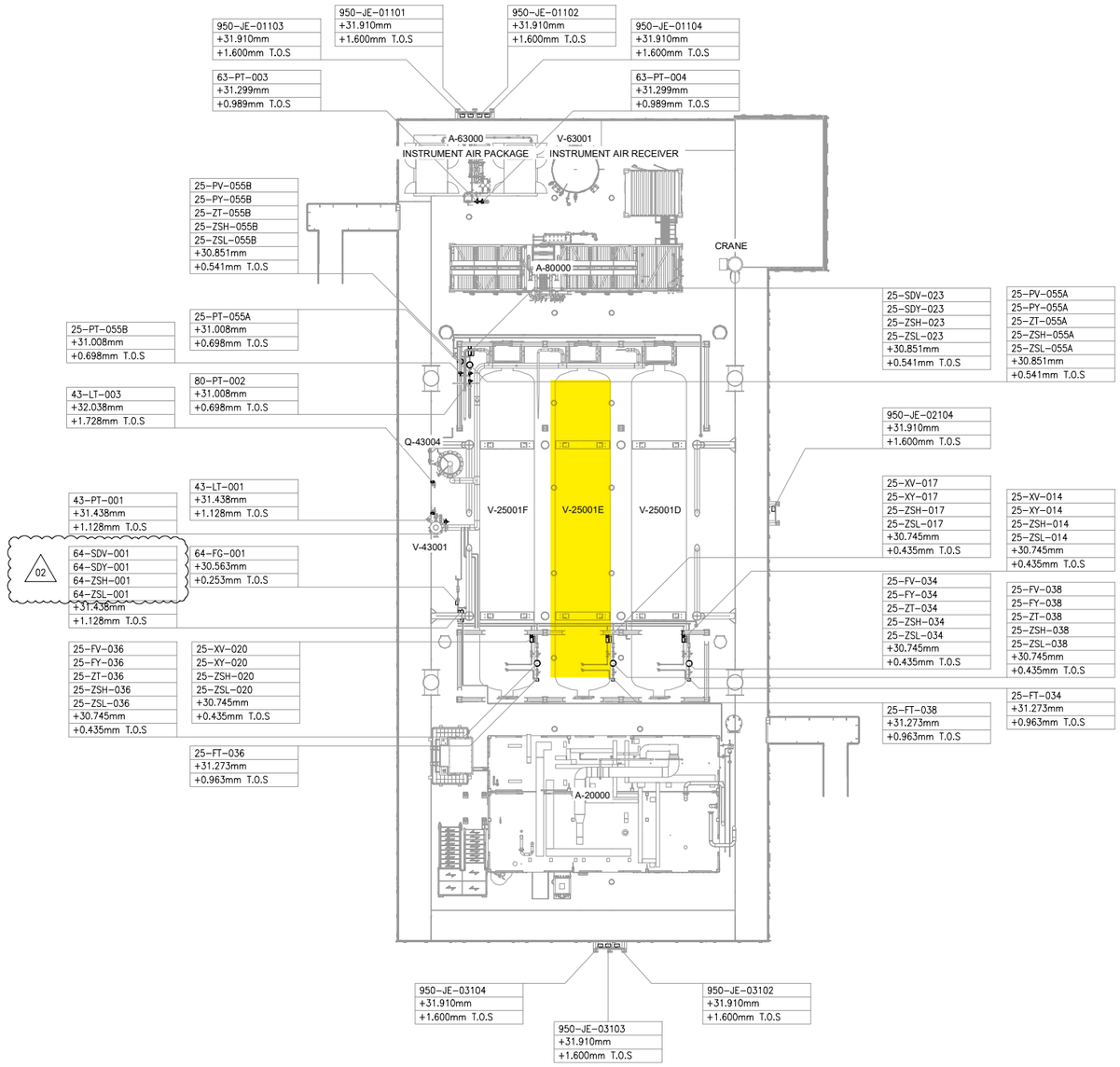
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name = FILE_NAME

DRAWING NO. 123A90-DDL-IN-DL-40081

REV. 01

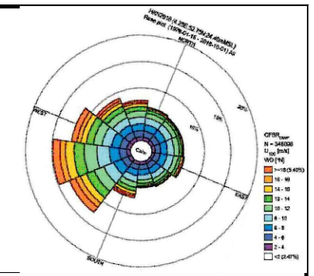


UPPER DECK

SCALE: 1:100

VIEW EL. 29310mm to 33740mm





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT - LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24

A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 001	REV. 02

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40081**

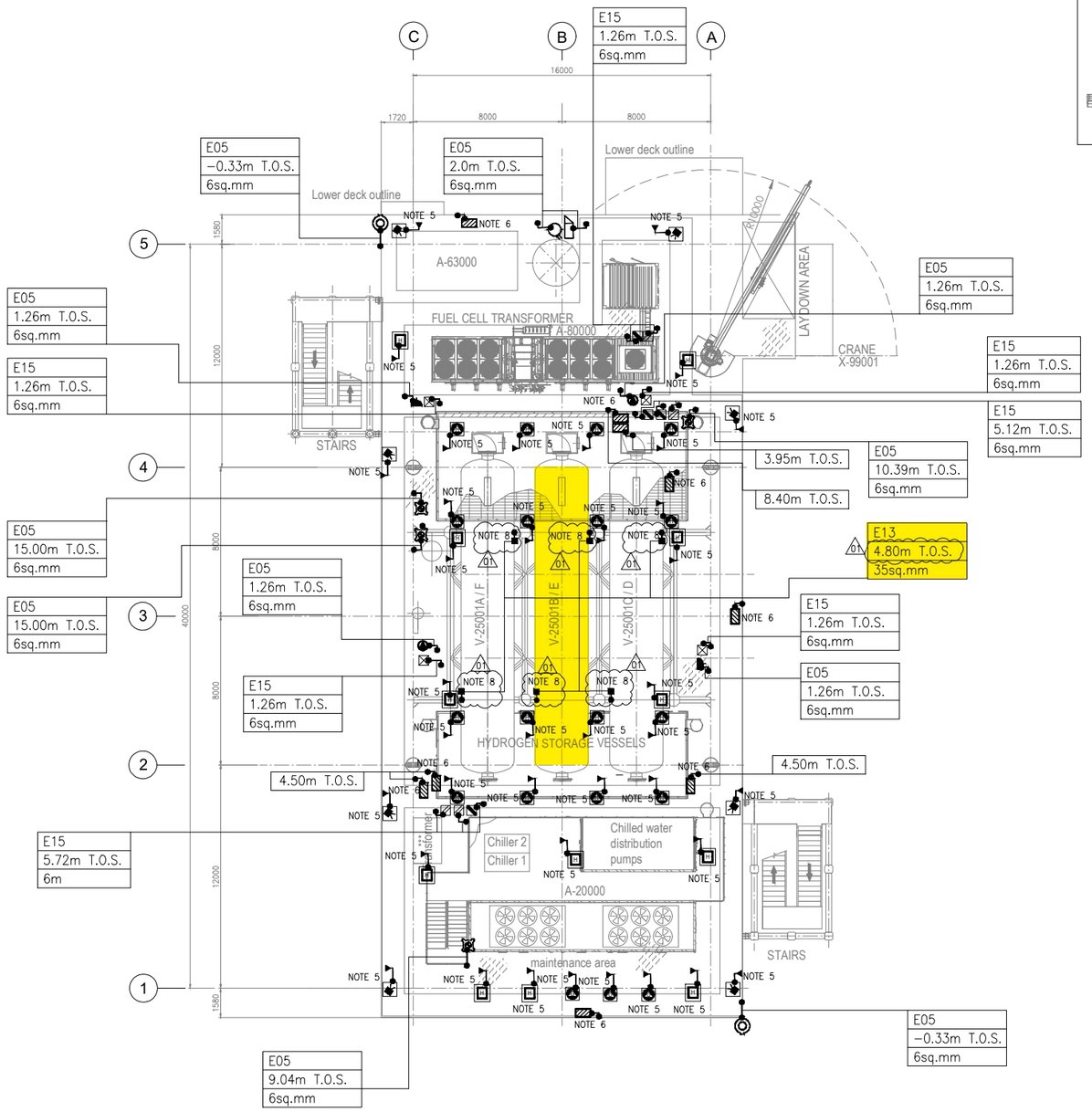
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2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

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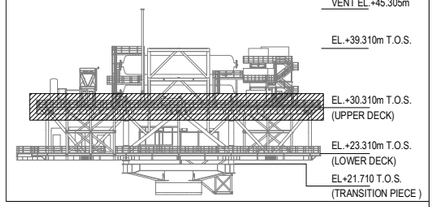
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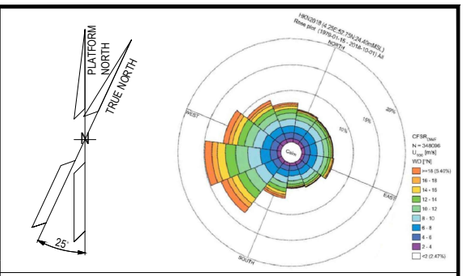
REV. 01



PLAN ON TOP DECK
EL+30.310 T.O.S.

KEY PLAN





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DOCUMENT IS ONLY VALID FOR EARTHING LAYOUT.
4. ALL ELECTRICAL EQUIPMENT NOT DIRECTLY WELDED TO SKID FRAME SHALL BE BONDED TO STEEL TO THE STRUCTURE OF SKID BASEFRAME.
5. ALL POLE MOUNTED INSTRUMENT DETECTORS WILL BE EARTHED AS PER TYPICAL E05 AND E24.
6. ALL INSTRUMENT RACK WILL BE EARTHED AS PER TYPICAL E05A.
7. EQUIPOTENTIAL BONDING GROUPING FOR BOLTED HANDRAILS ARE PROVIDED EVERY 3M FOR THE ENTIRE PERIMETER AS TYPICAL E16 AND WILL BE DEFINED DURING ASSEMBLY PHASE
8. EARTHED VESSELS V-25001A/B/C. FOR EARTHING V-25001D/E/F SEE SHEET 1 (01)

LEGEND

- POINT SOURCE HYDROGEN DETECTOR
- ULTRA SONIC HYDROGEN DETECTOR
- POINT SOURCE OXYGEN DETECTOR
- UV−IR FLAME DETECTOR
- INSTRUMENT RACK
- COMPRESSION TYPE LUG TINNED COPPER
- THREADED STUD FOR EARTHING CONNECTION
- EMERGENCY & NORMAL LIGHTING JB
- WELDING SOCKET & JB
- SMALL POWER SOCKET & JB
- MAIN YELLOW LANTERNS
- OBSTRUCTION RED LED LIGHTS (MEDIUM INTENSITY)
- PHOTOCELL
- VISIBILITY METER

TYP.	TYPICAL
ELE	ELEVATION
SIZE	

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20100	ELECTRICAL EQUIPMENT LAYOUT - TOP DECK
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS - EARTHING SYSTEM
123A90-DDL-EL-RE-20154	LIGHTNING PROTECTION SYSTEM CALCULATION REPORT
123A90-DDL-EL-DL-20118	LIGHTING & SOCKET LAYOUT - TOP DECK
123A90-DDL-SAF-DL-30027	F & G DETECTORS LAYOUT - LOWER & UPPER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	31/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	27/05/24	NLK	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

REV.:	DATE:	SIGNATURE:
1_B	08/11/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT
TOP DECK

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:150

DRAWN NLK | CHECKED FMA/AMA | APPROVED FPA/DLO | DATE 31/07/24

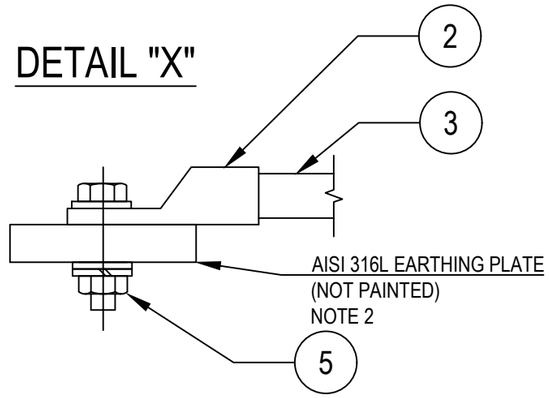
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SHEET 002 OF 002

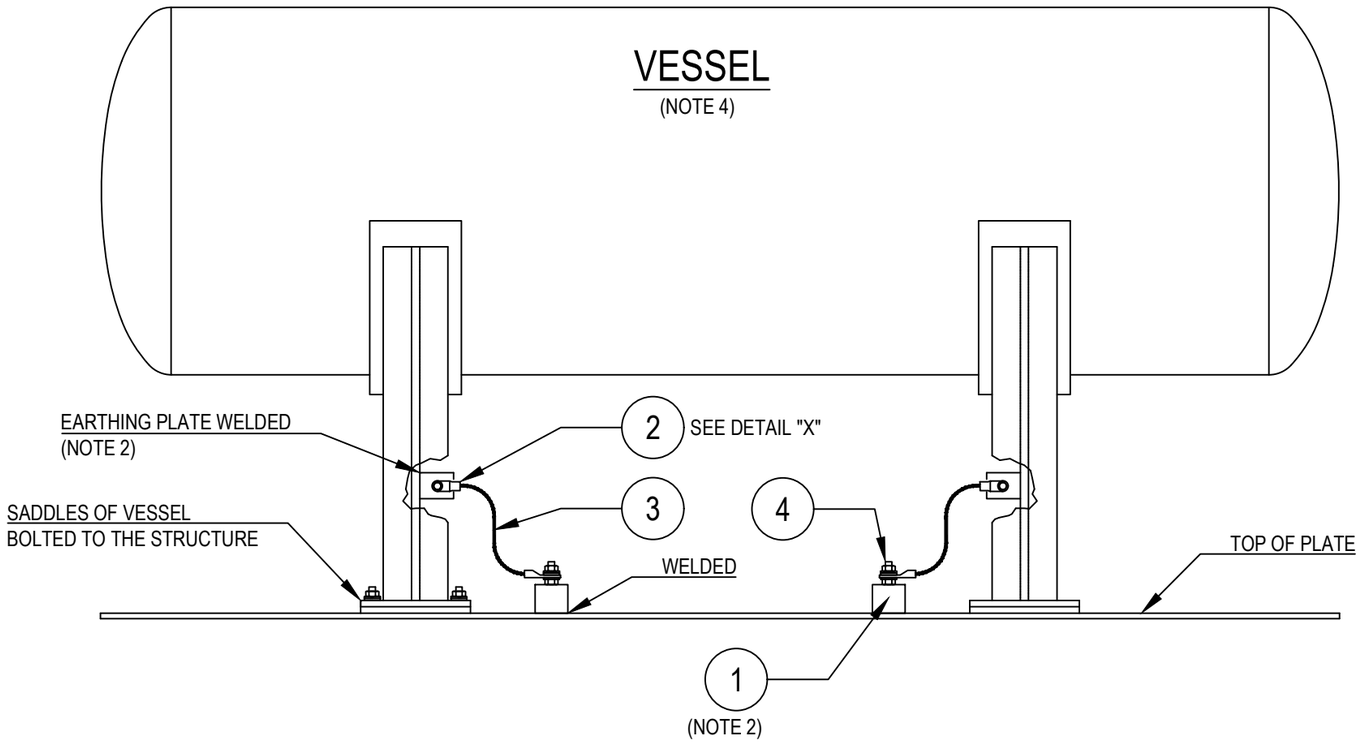
File Name : 123A90-DDL-EL-DL-20132

E13

DETAIL "X"



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50	2	NOTE 3
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	35mm^2	4	~~NOTE 1~~
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	35mm^2		~~NOTE 1~~
4	STUD BOLT WITH PLANE WASHER, SPRING WASHER AND NUT	AISI 316L	M10X50	2	
5	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	2	



NOTES:
~~1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.~~
2) FOR EARTHING BOSS/PLATE DETAIL SEE TYPICAL DETAIL E11A
3) EARTHING BOSS SHALL BE PROTECTED AGAINST CORROSION USING AN OXIDE RESISTANT COMPOUND

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

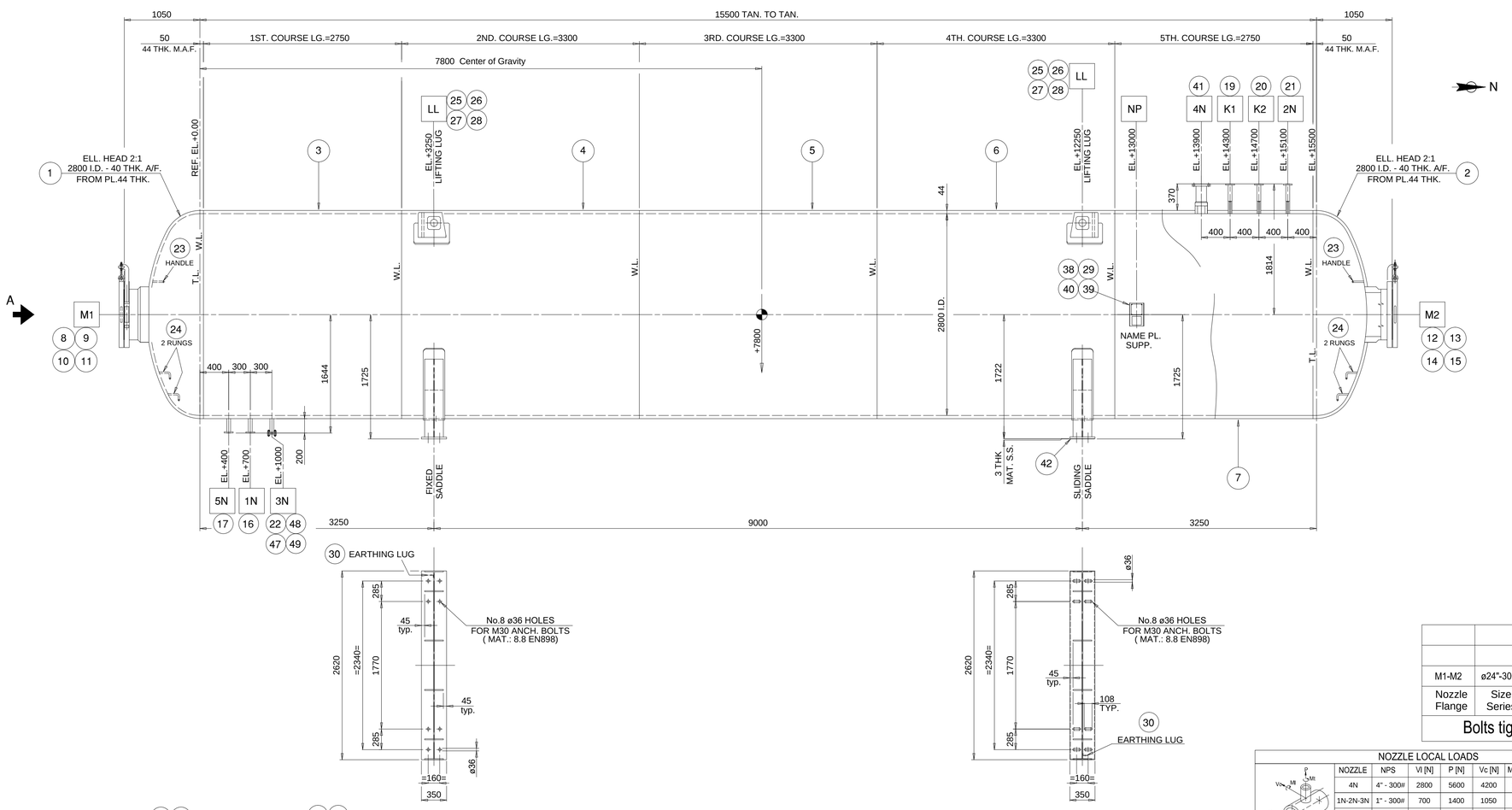
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR VESSEL WITH LEGS BOLTED ON STRUCTURE

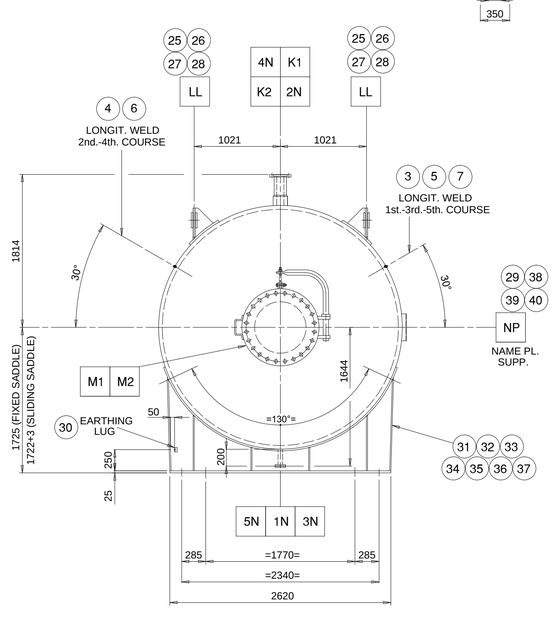
CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90–DDL–EL–DD–20090 | SHEET 016 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG





NOTES

1) No.6 PIECES REQUIRED
2) FOR BILL OF MATERIALS AND GENERAL NOTES SEE DRAWING 23096-01-EBM1
3) FOR WELDING DETAIL SEE DRAWING 23096-01-EWM1
4) BOLT HOLES OF THE NOZZLES SHALL ALWAYS STRADDLE THE PRINCIPAL CENTERLINES OF THE VESSELS OR THEIR PARALLEL LINES.
5) NOZZLES PROJECTIONS REFERRED FROM VESSEL CENTERLINE TO FACE FLANGE.
6) REINFORCING PADS SHALL BE PROVIDED WITH ONE ¼" NPT TELL TALE HOLE (B1.20.1)
7) MAWP SET EQUAL TO DESIGN PRESSURE TO ASME VIII DIV.2 PART.2 PARA 2.2.3.1 (d) (1)

NORME DI COSTRUZIONE		ASME VIII Div.2 CLASS 2 2021 ED. PED 2014/68/EU
CODE OF CONSTRUCTION		
USER CLASSIFICATION OF INSTALLATION AREA		ZONE 1 IIB T1+H2
CLASSIF. UTENTE AREA DI INSTALLAZIONE		
MARCATURA		CERTIFICATION MARK "U2" + NBR CE
MARKING		
ENTE NOTIFICATO		LRQA INSPECTION IBERIA SA. No.0094
NOTIFIED BODY		
ANTINCENDIO (ESCLUSO DALLA NS. FORNITURA)	mm	NO
FIREPROOFING (NOT INCLUDED IN OUR SCOPE OF SUPPLY)		
ISOLAMENTO (ESCLUSO DALLA NS. FORNITURA)	mm	NO
INSULATION (NOT INCLUDED IN OUR SCOPE OF SUPPLY)		
PESO PIENO D'ACQUA (IN SHOP)	Kg	160400
TOTAL WEIGHT FULL WATER		
CAPACITÀ	m³	101.2 (101200 L)
CAPACITY (V)		
PESO IN ESERCIZIO	Kg	58900
OPERATING WEIGHT		
PESO A VUOTO ASSIEMATO	Kg	58700
EMPTY WEIGHT		
PESO DI FABBRICAZIONE	Kg	58700
FABRICATED WEIGHT		
PESO DI SOLLEVAMENTO	Kg	58700
LIFTING WEIGHT		
CONTROLLI NON DISTRUTTIVI		SEE "INSPECTION TEST PLAN" 1723001756-QC-ITP-00002
N.D.T.		
PARTICOLARI DI SALDATURA		SEE "WELDING BOOK" 1723001756-WEL-PRO-00014
WELDING DETAIL		
MASSIMA OVALIZZAZIONE SUL DIAMETRO	%	1
MAX. OVALIZATION OF DIAMETER		
VENTO		NEN - EN 1991-1-4
WIND		
TERREMOTO		N/A
EARTHQUAKE		
NEVE		NEN - EN 1991-1-3
SNOW		
EFFICIENZA GIUNTI		1
JOINT EFFICIENCY		
RADIOGRAFIA / UT		100%
RADIOGRAPHY / UT		
RICOTTURA		YES
P.W.H.T.		
PED MODULE		G
MODULO PED		
CATEGORY		IV
CATEGORIA		
PED FLUID GROUP		1
GRUPPO FLUIDO PED		
TALLONE DI SALDATURA		NO (5)
WELDING COUPON		
COLLAUDO / GRUPPO ISPEZIONE		1B
EXAMINATION / EXAMINATION GROUP		
CORROSIONE AMMISSIBILE	mm	NO
CORROSION ALLOWANCE		
NOME DEL FLUIDO		HYDROGEN
FLUID NAME		
PRESSIONE DI PROVA IDRAULICA	barg	57.2
HYDRAULIC TEST PRESSURE (PT)		
M.D.M.T.	°C	-29
M.D.M.T. (TM)		
SURFACE TREATMENT		1723001756-MAC-PRO-00008
TRATT. SUPERF.		
TEMPERATURA DI ESERCIZIO	°C	20
OPERATING TEMPERATURE		
MASS. PRESS. AMM. DI LAVORO EXT.	barg	F.V. @ 80°C
MAX. ALLOW. WORKING PRESS. EXT.		
PRESSIONE DI ESERCIZIO	barg	30
OPERATING PRESSURE		
TEMPERATURA DI PROGETTO	°C	-29 / 80
DESIGN TEMPERATURE (TS)		
PRESSIONE DI PROGETTO	barg	40
DESIGN PRESSURE (MAWP) (PS) (7)		
	barg	

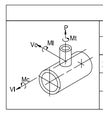
DESCRIPTION

DESIGN DATA TABLE

M1-M2	ø24"-300#	Min.: 2003 Max.: 2754
Nozzle Flange	Size Series	Bolt Torque Value (Nxm)

Bolts tightening

NOZZLE LOCAL LOADS



NOZZLE	NPS	Vl [N]	P [N]	Vc [N]	Mc [Nm]	Mt [Nm]	Ml [Nm]
4N	4" - 300#	2800	5600	4200	1120	1680	1456
1N-2N-3N	1" - 300#	700	1400	1050	18	105	18
5N	1" - 300#	700	1400	1050	18	105	18

SHELL	SA 516 Gr.60 HIC
ELLIPTICAL HEAD	SA 516 Gr.60 HIC
SADDLE	SA 516 Gr.60
EXT. WELDED	SA 516 Gr.60
INT. WELDED	SA 516 Gr.60
INTERNALS REMOV.	-
FORGINGS (1N-2N-3N-4N-5N-K1-K2)	SA 350 LF2 CL.1
FORGINGS (M1-M2)	SA 350 LF2 CL.1
PIPES	SA 333 GR.6
BLIND FLANGES (M1-M2)	SA 350 LF2 CL.1
STUD BOLTS & NUTS	SA 193 GR.B7 / SA 194 GR.2H
INT. BOLTING	SA 193 GR.B6 / SA 194 GR.6
GASKET	
FLANGE GASKETS	S.W. 316 S.S. GRAPHITE FILLED WITH 316 S.S. INNER RING & EPOXY-COATED C.S. OUTER RINGS

MATERIALS LIST FOR MAIN COMPONENTS

FOUNDATION LOADS			ERECTION	OPERATING	HY-TEST
CONDITION					
WEIGHT		[kg]	58700	58900	160400
WIND	LONG. SHEAR LOAD	[kN]	26	26	7
	TRANS. SHEAR LOAD	[kN]	77	77	20
	LONG. MOMENT	[kNm]	45	45	12.1
	TRASVERSAL MOMENT	[kNm]	132.8	132.8	34.5
EARTHQUAKE	LONG. SHEAR LOAD	[kN]	-	-	-
	TRANS. SHEAR LOAD	[kN]	-	-	-
	LONG. MOMENT	[kNm]	-	-	-
	TRASVERSAL MOMENT	[kNm]	-	-	-
UNFACTORED LOAD					

- LONGIT. WIND SHEAR ACTING ON FIXED SADDLE
- TRANSV. WIND SHEAR IS THE GLOBAL VALUE ACTING ON THE EQUIPMENT. TO BE DIVIDED BY TWO FOR SHEAR ACTING ON THE SINGLE SADDLE

Mechanical Calculation	1723001756-MAC-CAL-00003	23096-01-EMC1
Shipping Drawing	1723001756-TI-DD-00021	23096-01-ESH1
Name Plates Drawing	1723001756-MAC-DD-00006	23096-01-ENP1
Welding map Drawing	1723001756-WEL-DD-00014	23096-01-EWM1
Bill of Material & Notes	1723001756-MAC-DD-00024	23096-01-EBM1
Details Drawing - 2	1723001756-MAC-DD-00023	23096-01-ED02
Details Drawing - 1	1723001756-MAC-DD-00005	23096-01-ED01
General Arrangement	1723001756-MAC-DA-00004	23096-01-EGA1
TITLE	Project Doc. No.	B&R Doc. No.

LIST OF DRAWINGS

MK.	Q.TY	DIA.	RATING	TYPE FLANGE	THK.	I.D.	SELFREINF. THK.	PROJECTION	SERVICE
M2	1	24"	300#	LWN-RF Spec. + BL.	46.05	609.6	80.0	SEE DWG	MANHOLE C/W DAVIT
M1	1	24"	300#	LWN-RF Spec. + BL.	46.05	609.6	80.0	SEE DWG	MANHOLE C/W DAVIT
K2	1	1"	300#	LWN-RF	14.3	25.4	-	1814	PRESS. TRASM. (CTRL)
K1	1	1"	300#	LWN-RF	14.3	25.4	-	1814	PRESS. TRASM. (ESD)
5N	1	1"	300#	LWN-RF	14.3	25.4	-	1644	NITROGEN PURGING
4N	1	4"	300#	LWN-RF	22.2	101.6	35.0	1814	PSV CONNECTION
3N	1	1"	300#	LWN-RF + BL.	14.3	25.4	-	1644	DRAIN WITH BLIND
2N	1	1"	300#	LWN-RF	14.3	25.4	-	1814	HYDROGEN OUTLET
1N	1	1"	300#	LWN-RF	14.3	25.4	-	1644	HYDROGEN INLET

NOZZLES TABLE

BREMBANA&ROLLE — VILLA & BONALDI

CLIENT : Rosetti Marino S.p.A.

PROJECT: CROSSWIND HOLLANDE KUST NOORD WIND PARK

PURCHASE ORDER No.: 1723001756 123A90A

LOCATION : NETHERLANDS, 18.5KM OFF THE COAST , NEAR THE TOWN OF EGMOND AAN ZEE.

B&R CAD FILE No: 23096-01-EGA1.dwg | MFR'S S.N. 23096-01-SNA/F | B&R DRAWING No. 23096-01-EGA1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
5	14/05/2024	AFO	MAT	DOS	ACCEPTED FOR CONSTRUCTION (AFC)
4	18/03/2024	AFO	MAT	DOS	ACCEPTED FOR CONSTRUCTION (AFC)
3	21/02/2024	AFO	MAT	DOS	ACCEPTED FOR CONSTRUCTION (AFC)
2	16/02/2024	AFO	MAT	DOS	ISSUE FOR REVIEW (IFR)
1	21/12/2023	AFO	MAT	DOS	ISSUE FOR REVIEW (IFR)
0	16/11/2023	AFO	MAT	DOS	ISSUE FOR REVIEW (IFR)

CROSSWIND — ROSETTI MARINO

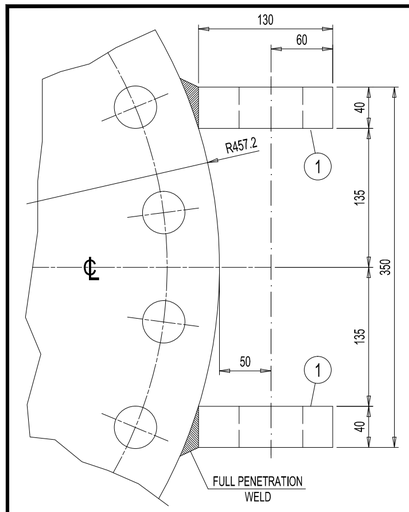
GENERAL ARRANGEMENT DRAWING AND FOUNDATION LOADING DIAGRAM
HYDROGEN STORAGE VESSEL ITEM : V-25001A/F

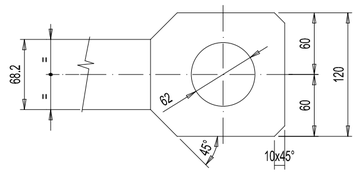
CONTRACT NO. CW-I-WP4-2023-05 / H2 STORAGE | SCALE 1:35

DRAWN A.FRANCO | CHECKED M.TONIOLO | APPROVED D.PASSERINI | DATE 14/05/24

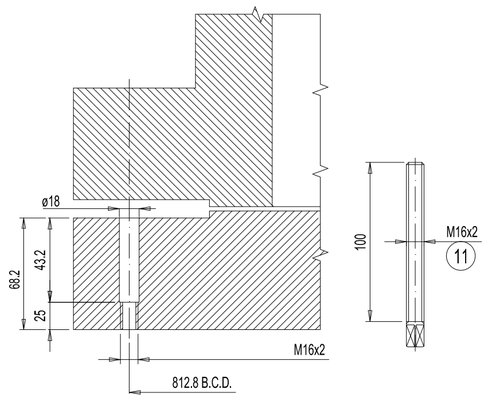
A1 | DRAWING NO. 1723001756-MAC-DA-00004 | SHEET 1 | REV. 4

File Name : 1723001756-MAC-DA-00004.DWG

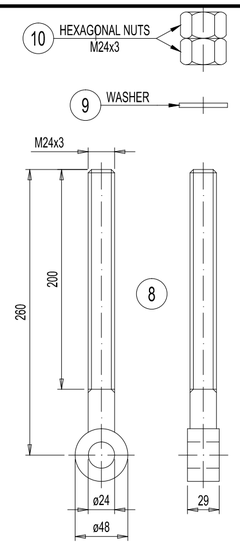




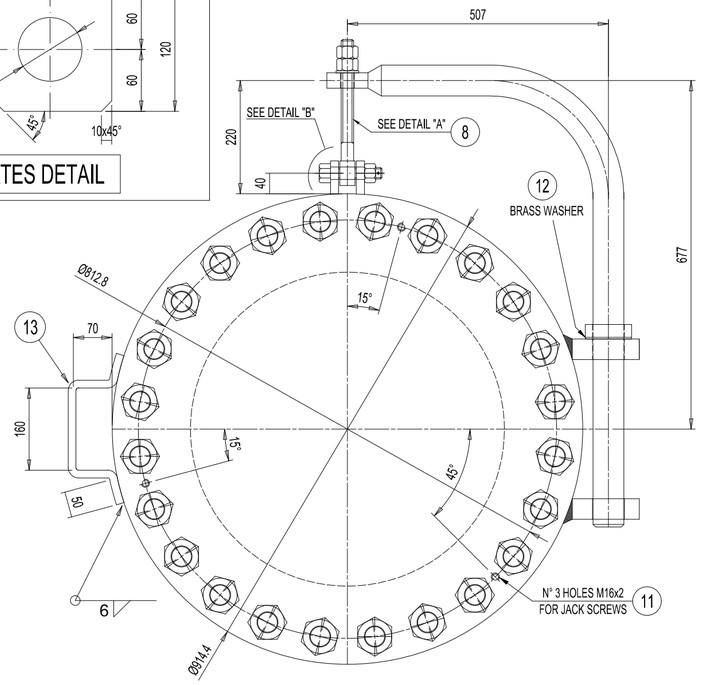
SUPPORT PLATES DETAIL

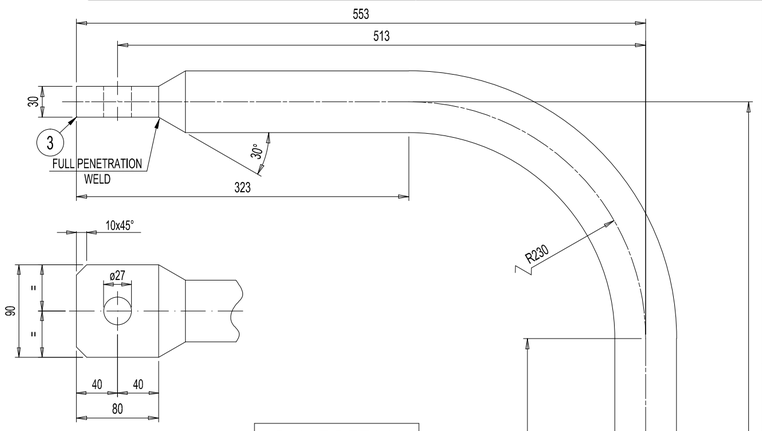


JACK SCREWS DETAIL

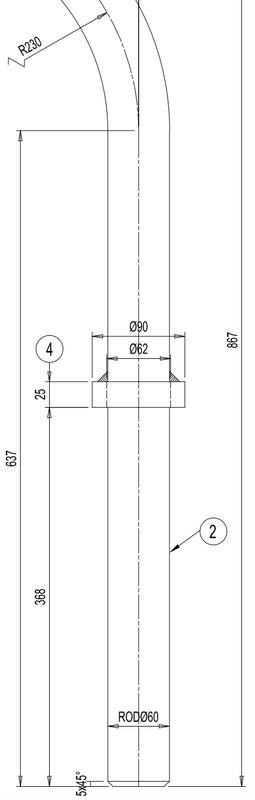


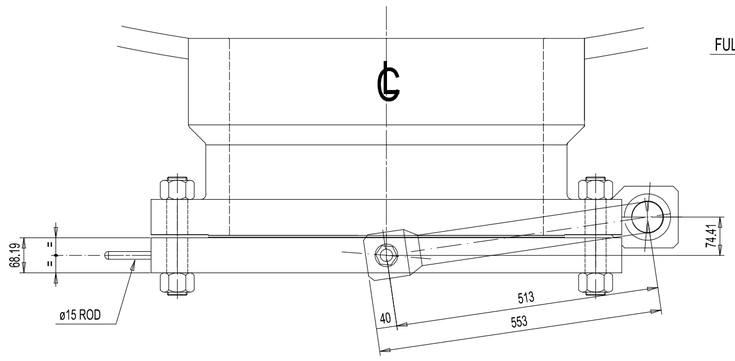
DETAIL "A"

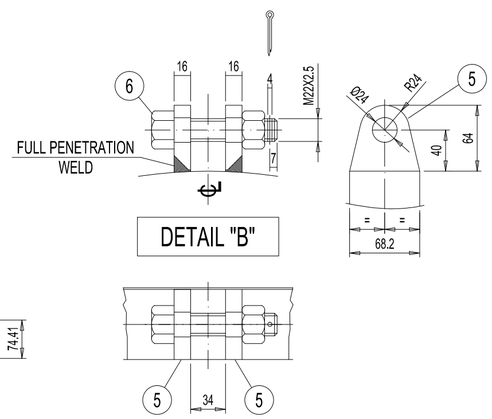




DAVIT DETAIL







DETAIL "B"

13	ROD	1		SA 36	ø15-438 Lg.	–
12	WASHER	2		BRASS	90 O.D.-62 I.D.-3 Thk.	–
11	JACK SCREW H.H.	6		SA 307 Gr.B	M16x2-100 Lg.	Note 6b
10	HEXAGONAL NUT	4		SA 194 Gr.2H	M24x3	–
9	WASHER	2		SA 36 or equivalent	40 O.D.-25 I.D.-4 Thk.	–
8	EYE BOLT (SEE DETAIL)	2		SA 193 Gr.B7+ SA 194 Gr.2H	M24x3-260 Lg.	–
7	SPLIT PIN	2		S.S. 304	4 Dia.-45 Lg.	–
6	BOLT WITH NUT	2		SA 193 Gr.B7+ SA 194 Gr.2H	M22x2.5-100 Lg.	Note 6b
5	PLATE	4		SA 516 Gr.70	68x100x16 Thk.	3.1 Cert
4	RING	2		SA 516 Gr.70	90 O.D.-62 I.D.-25 Thk.	–
3	PLATE	2		SA 516 Gr.70	80x90x30 Thk.	–
2	ROD	2		SA 36 or equivalent	ø60-1236 Lg.	–
1	PLATE	4		SA 516 Gr.70	130x120x40 Thk.	3.1 Cert
MK	DESCRIPTION	Q.TY	Standard	MATERIAL	DIMENSIONS	Mat. test report
MC.	DESCRIZIONE	Q.TÀ	Standard	MATERIALE	DIMENSIONI	

23096-01-EGA1	General Arrangement
Manufacturer Dwg. No.	Description
Reference documents/belong to drawing	

BREMBANA&ROLLE

VILLA & BONALDI

CLIENT : Rosetti Marino S.p.A.

PROJECT: CROSSWIND HOLLANDE KUST NOORD WIND PARK

PURCHASE ORDER No.: 1723001756 123A90A

LOCATION : NETHERLANDS, 18.5KM OFF THE COAST , NEAR THE TOWN OF EGMOND AAN ZEE.

B&R CAD FILE No: 23096-01-EGA1.dwg

MFR'S S.N. 23096-01-SNA/F

B&R DRAWING No. 23096-01-ED02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
0	23/11/2023	A.D.	M.T.	D.P.	ISSUE FOR INFORMATION (IFR)

CROSSWIND

ROSETTI MARINO

DETAIL DRAWING
MANHOLE DAVIT
H2 STORAGE VESSEL ITEM : V-25001A/F

CONTRACT NO. CW-I-WP4-2023-05 / H2 STORAGE

SCALE 1:10

DRAWN D.ADELINI | CHECKED M.TONIOLO | APPROVED D.PASSERINI | DATE 23/11/23

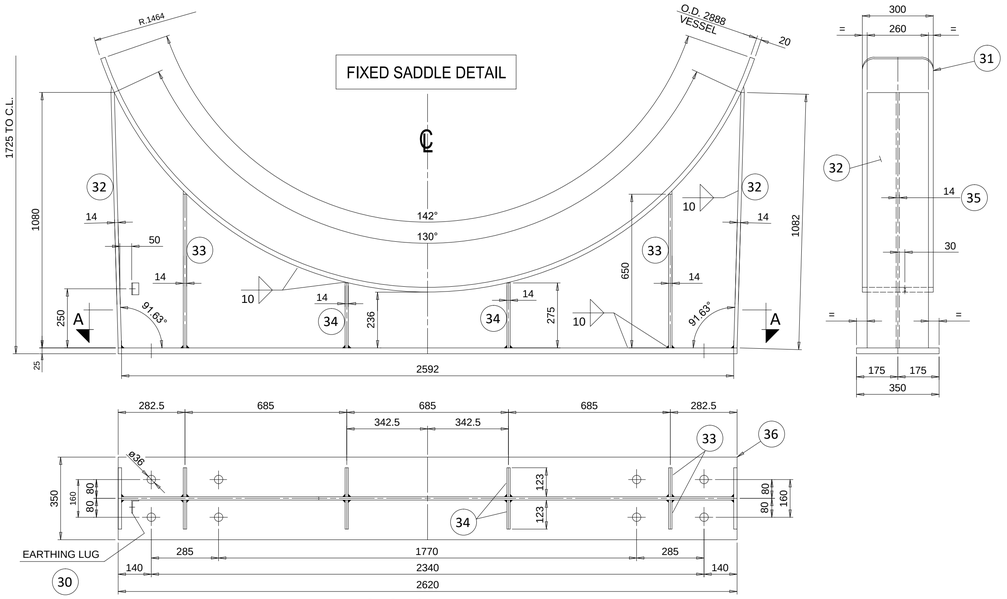
A2

DRAWING NO. 1723001756-MAC-DD-00023

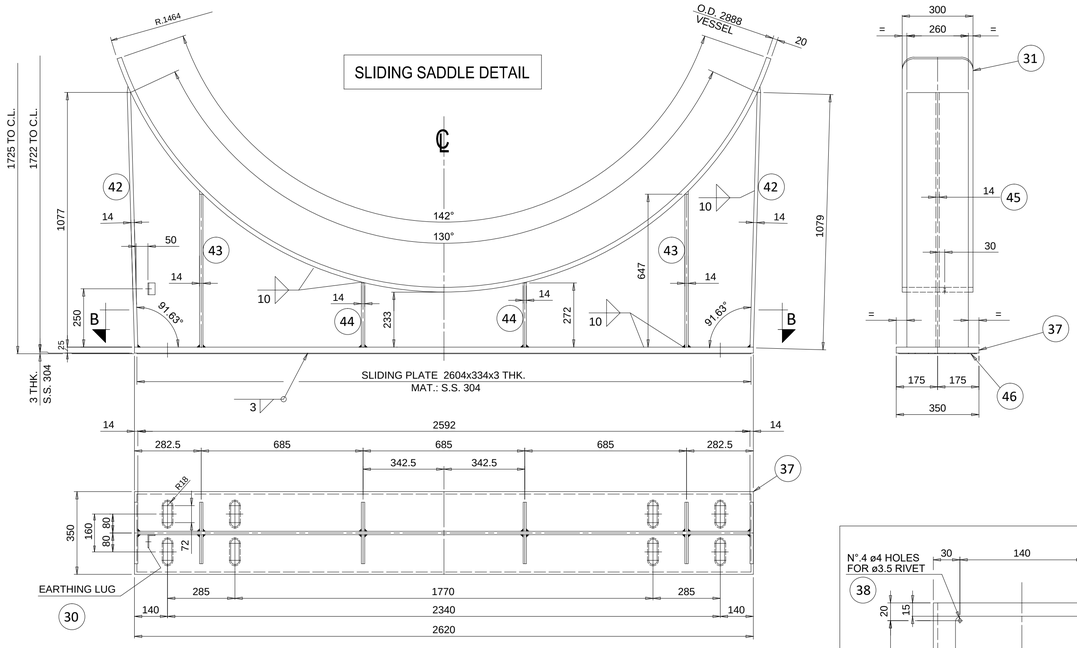
SHEET 1

REV. 0

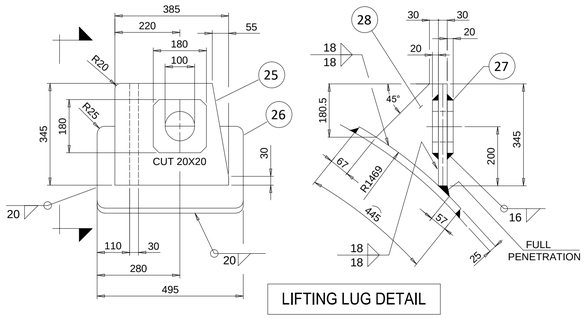
File Name : 1723001756-MAC-DD-00023.DWG



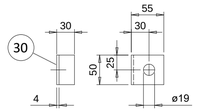
SECTION "A-A"



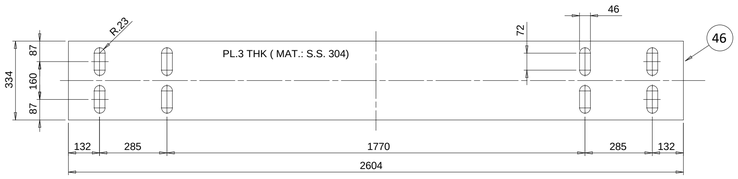
SECTION "B-B"



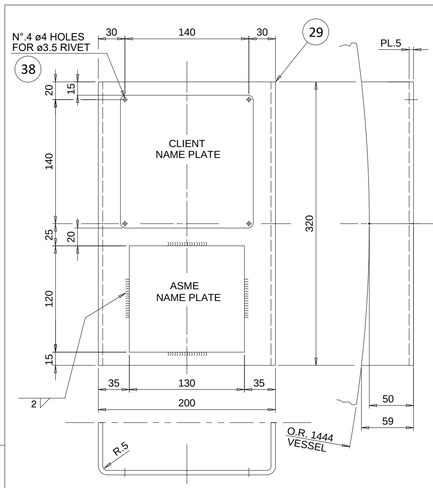
LIFTING LUG DETAIL



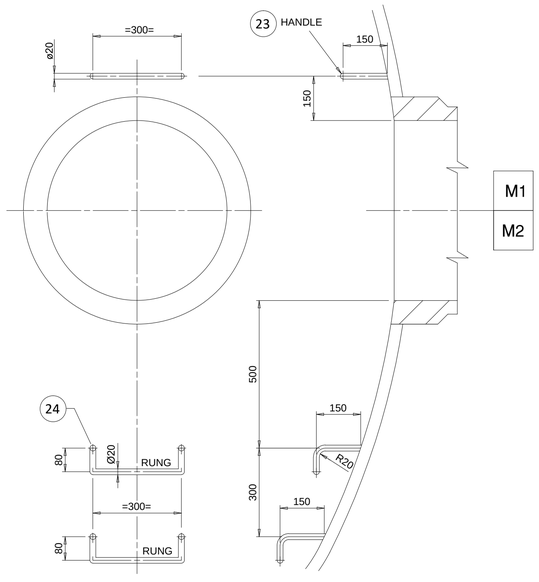
EARTHING LUG DETAIL



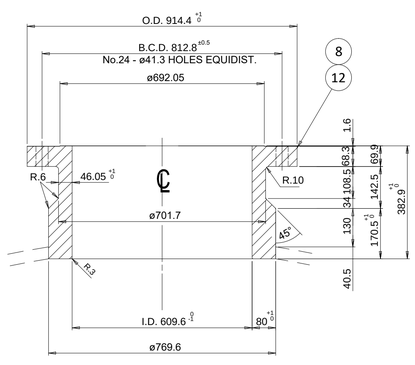
SLIDING PLATE DETAIL



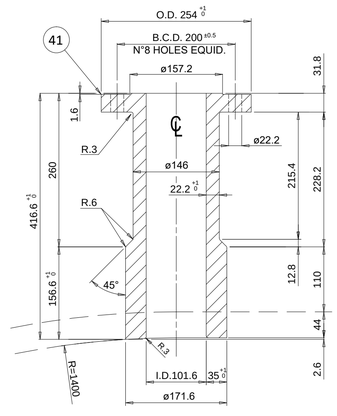
NAME PLATE SUPPORT DETAIL



INT. LADDERS & RUNG DETAIL



"M1"-"M2" REINF. NOZZLE FLANGE DETAIL



"4N" REINF. NOZZLE FLANGE DETAIL

23096-01-EWM1	Welding map Drawing
23096-01-EBM1	Bill of material and General Notes
23096-01-ED02	Manhole Davit Detail
23096-01-EGA1	General Arrangement
Manufacturer Dwg. No.	Description

Reference documents/belong to drawing

BREMBANA&ROLLE

VILLA & BONALDI

CLIENT : Rosetti Marino S.p.A.	PROJECT: CROSSWIND HOLLANDE KUST NOORD WIND PARK
PURCHASE ORDER No.: 1723001756 123A90A	LOCATION : NETHERLANDS, 18.5KM OFF THE COAST , NEAR THE TOWN OF EGMOND AAN ZEE.

B&R CAD FILE No: 23096-01-EGA1.DWG | MFR'S S.N. 23096-01-SNA/F | B&R DRAWING No. 23096-01-ED01

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
2	21/03/2024				ISSUE FOR INFORMATION (IFI)
1	07/02/2024				ISSUE FOR INFORMATION (IFI)
0	23/11/2023				ISSUE FOR INFORMATION (IFI)

CROSSWIND

ROSETTI MARINO

DETAILED DRAWING INCLUDING CROSS SECTION–EXPLODED VIEW DRAWING
H2 STORAGE VESSEL ITEM : V–25001A/F

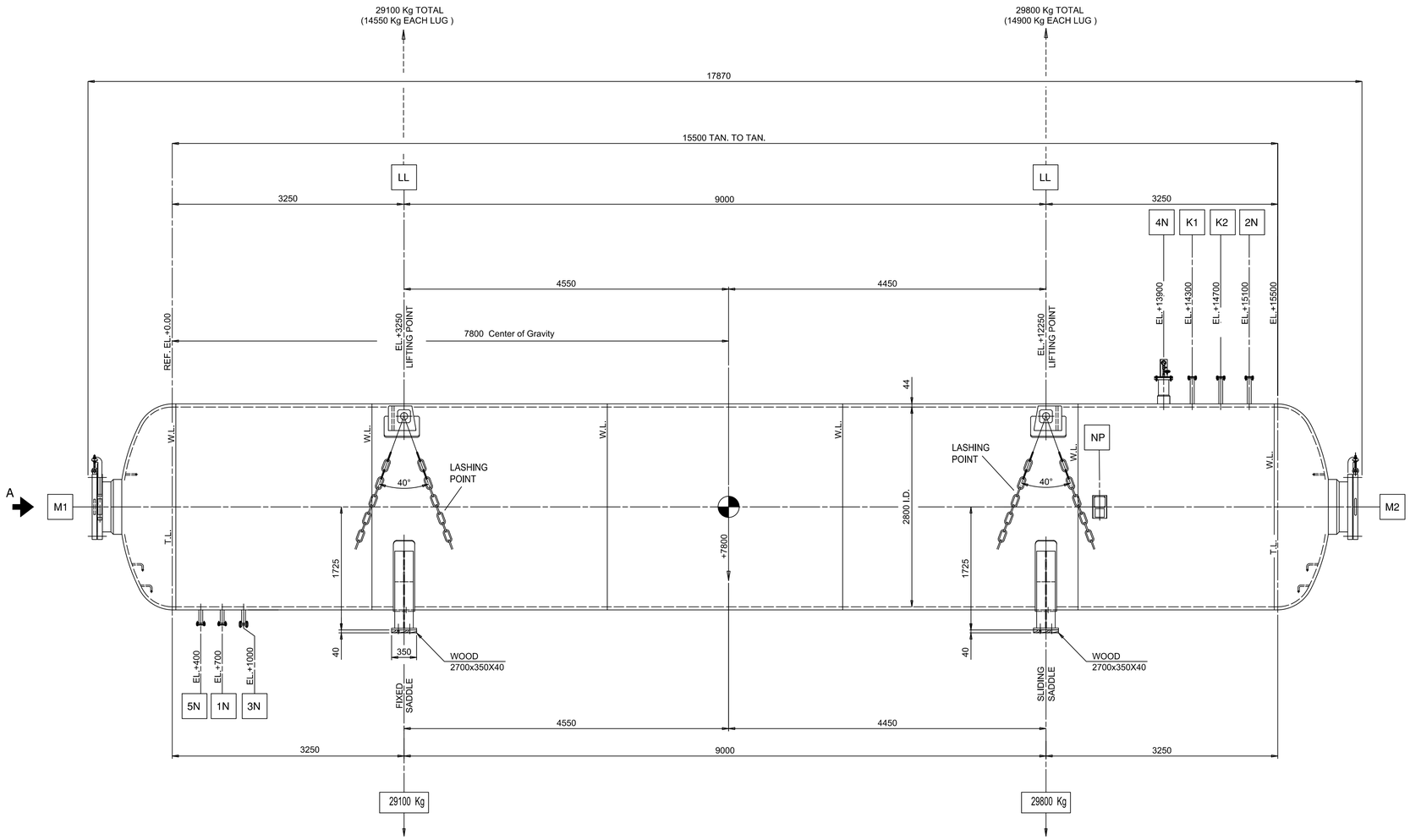
CONTRACT NO. CW–I–WP4–2023–05 / H2 STORAGE | SCALE 1:10

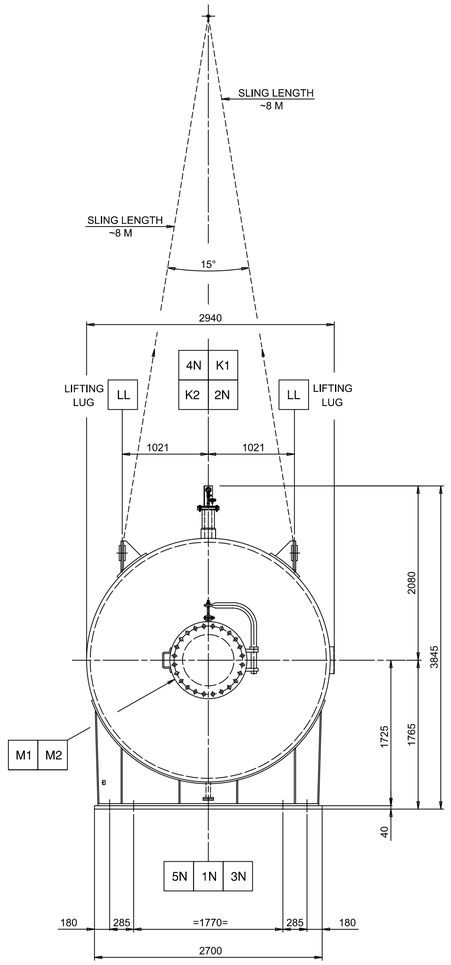
DRAWN D.ADELINI | CHECKED M.TONIOLO | APPROVED D.PASSERINI | DATE 23/11/23

A1 | DRAWING NO. 1723001756–MAC–DD–00005 | SHEET 1 | REV. 2

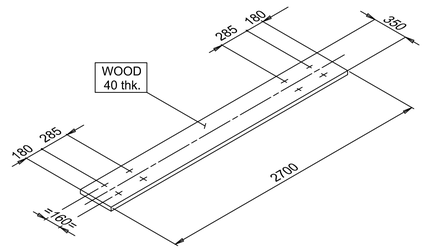
File Name : 1723001756-MAC-DD-00005.DWG

SAFE WORKING LOAD (SWL) FOR EACH LUG
30000 Kg (WITH SAFETY FACTOR 1.5)





VIEW FROM -A-



No. 2 PIECES

NOTES:

1) FOR EQUIPMENT ASSEMBLY, BILL OF MATERIAL & GENERAL NOTES SEE DRAWINGS:
   N. 23096-01-EGA1 & DWG. N. 23096-01-EBM1 .
2) LIFTING OF THE EQUIPMENT TO BE PERFORMED BY MEANS OF DEVICES WITH ADEQUATE LOADING CAPACITY (OUT OF B&R SCOPE OF SUPPLY).
3) LIFTING POINTS AND C.O.G. SHALL BE MARKED BY PAINTING ON THE OPPOSITE SIDES OF SHELL.
4) LOOSE PARTS AND SPARE PARTS SHIPPED IN A SEPARATE WOODEN BOX WITH A SEPARATE PACKING LIST.
5) LASHING POINTS SHALL BE PROTECTED WITH A POLYETHYLENE SHEET TO PREVENT PAINT FROM BEING DAMAGED. TRUE POSITION, PROTECTION AND LASHING OUTFIT SHALL BE DEFINED AND EQUIPPED BY THE CARRIER.
6) ALL WOODS MUST BE HEAT TREATED AND CERTIFIED ACCORDING TO ISPM 15.
7) TRANSPORTATION FROM ALBIGNASEGO TO RAVENNA SITE
8) PADEYES DESIGN IN SUITABLE FOR TWO SLINGS ARRANGEMENTS WITHOUT SPREADER BARS
9) PRESSURIZE VESSEL WITH NITROGEN TO POSITIVE INTERNAL PRESSURE OF 0,3÷0,5 Bar. ⚠4

QUANTITY :		1
EMPTY WEIGHT :	(KGS)	58700
GROSS WEIGHT :	(KGS)	58900
OVERALL LENGTH :	(mm)	(L)=17870
OVERALL WIDTH :	(mm)	(W)=2940
OVERALL HEIGHT :	(mm)	(H)=3845

BREMBANA&ROLLE — VILLA & BONALDI

CLIENT : Rosetti Marino S.p.A.
PURCHASE ORDER No.: 1723001756 123A90A
PROJECT: CROSSWIND HOLLANDE KUST NOORD WIND PARK
LOCATION : NETHERLANDS, 18.5KM OFF THE COAST , NEAR THE TOWN OF EGMOND AAN ZEE.

B&R CAD FILE No: 23096-01-EGA1.DWG | MFR'S S.N. 23096-01-SNA/F | B&R DRAWING No. 23096-01-ESH1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
4	03/10/2024	AD	MT	DR	ISSUE FOR INFORMATION (IFI)
3	19/08/2024	AD	MT	DR	ISSUE FOR INFORMATION (IFI)
2	12/07/2024	EG	MT	DR	ISSUE FOR INFORMATION (IFI)
1	13/05/2024	AD	MT	DR	ISSUE FOR INFORMATION (IFI)
0	30/04/2024	AD	MT	DR	ISSUE FOR REVIEW (IFR)

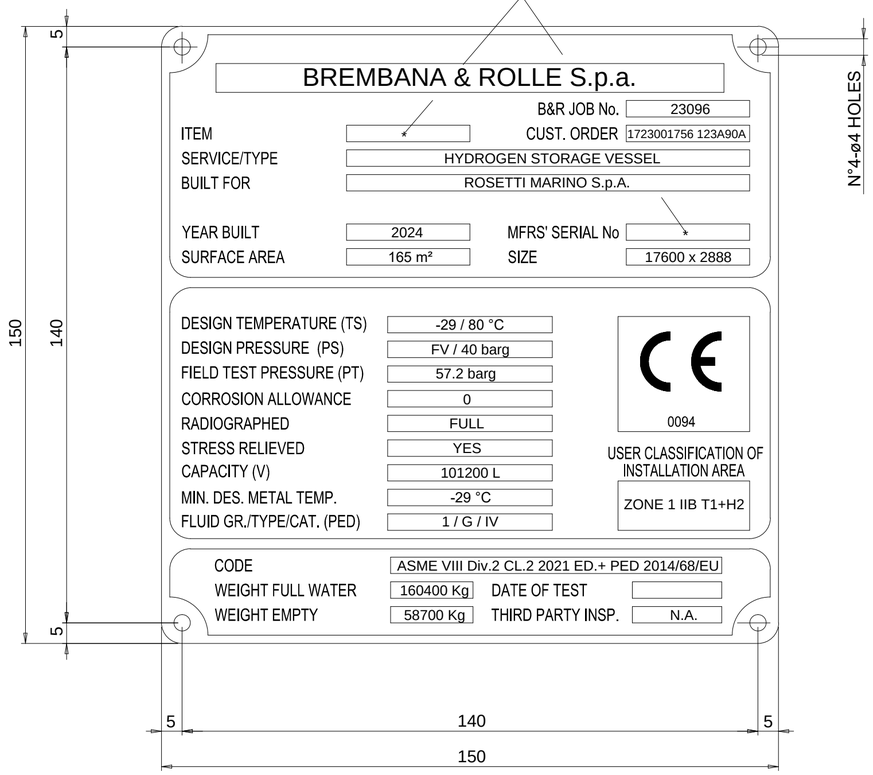
CROSSWIND — ROSETTI MARINO

SHIPPING DRAWING
HYDROGEN STORAGE VESSEL ITEM : V-25001A/F

CONTRACT NO. CW-I-WP4-2023-05 / H2 STORAGE | SCALE 1:35
DRAWN A.FRANCO | CHECKED M.TONIOLO | APPROVED D.PASSERINI | DATE 03/10/24
A1 | DRAWING NO. 1723001756-TI-DD-00021 | SHEET 1 | REV. 4

File Name : 1723001756-TI-DD-00021

ITEM	MFRS' SERIAL No
V-25001A	23096-01-SNA
V-25001B	23096-01-SNB
V-25001C	23096-01-SNC
V-25001D	23096-01-SND
V-25001E	23096-01-SNE
V-25001F	23096-01-SNF

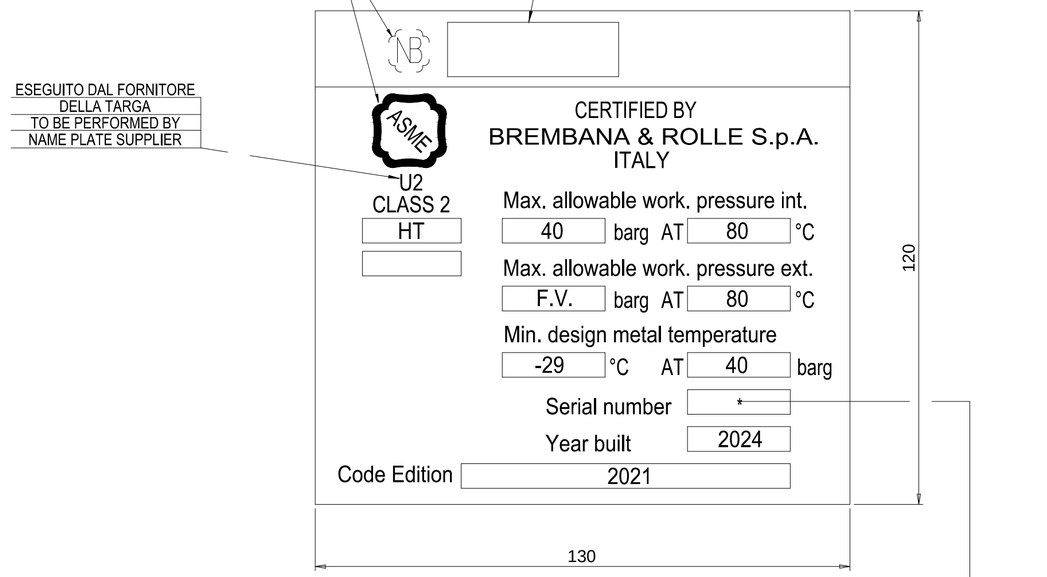


39 CLIENT NAME PLATE

STAMPIGLIATO IN OFFICINA DA BREMBANA&ROLLE
STAMPED IN SHOP BY BREMBANA&ROLLE

ESEGUITO DAL FORNITORE DELLA TARGA
TO BE PERFORMED BY NAME PLATE SUPPLIER

ESEGUITO DAL FORNITORE
DELLA TARGA
TO BE PERFORMED BY
NAME PLATE SUPPLIER



40 ASME NAME PLATE

MFRS' SERIAL No
23096-01-SNA
23096-01-SNB
23096-01-SNC
23096-01-SND
23096-01-SNE
23096-01-SNF

23096-01-EBM1	Bill of material and General Notes
23096-01-ED01	Detail Drawing (NP support)
23096-01-EGA1	General Arrangement
Manufacturer Dwg. No.	Description
Reference documents/belong to drawing	

NOTE-NOTES

1) TUTTE LE LETTERE E I NUMERI SONO INCISI CHIMICAMENTE
ALL LETTERS AND NUMBER ARE CHEMICALLY ETCHED
2) LA TARGA SARA' IN MATERIALE S.S. 316L CON Sp. 2 mm
NAME PLATE SHALL BE IN S.S. 316L MATERIAL WITH 2 mm THK
3) ALTEZZA MINIMA DELLE LETTERE 4 mm
MINIMUM HEIGHT OF LETTERS 5/32"
4) CARATTERI SONO INCISI O IN RILIEVO MINIMO 0.004 INC. (O.10mm)
CHARACTERS EITHER INDENTED OR RAISED MIN 0.004 INC. (O.10mm)
5) PER ASSIEME APPARECCHIO, VEDI DISEGNO 23096-01-EGA1
FOR GENERAL ASSEMBLY , SEE DWG 23096-01-EGA1

BREMBANA&ROLLE

VILLA & BONALDI

CLIENT : Rosetti Marino S.p.A.

PURCHASE ORDER No.: 1723001756 123A90A

PROJECT: CROSSWIND HOLLANDE KUST NOORD WIND PARK

LOCATION : NETHERLANDS, 18.5KM OFF THE COAST , NEAR THE TOWN OF EGMOND AAN ZEE.

B&R CAD FILE No: 23096-01-EGA1.dwg	MFR'S S.N. 23096-01-SNA/F	B&R DRAWING No. 23096-01-ENP1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	14/06/2024	AFG	MAT	DR	ACCEPTED FOR CONSTRUCTION (AFC)
2	18/03/2024	AFG	MAT	DR	ACCEPTED FOR CONSTRUCTION (AFC)
1	16/02/2024	AFG	MAT	DR	ACCEPTED FOR CONSTRUCTION (AFC)
0	30/11/2023	AFG	MAT	DR	ISSUE FOR INFORMATION (IFI)

CROSSWIND

ROSETTI MARINO

NAME PLATE DRAWING
H2 STORAGE VESSEL ITEM : V-25001A/F

CONTRACT NO. CW-I-WP4-2023-05 / H2 STORAGE				SCALE 1:1
DRAWN A.FRANCO	CHECKED M.TONIOLO	APPROVED D.PASSERINI		DATE 14/06/24
A2	DRAWING NO. 1723001756-MAC-DD-00006		SHEET 1	REV. 3

File Name : 1723001756-MAC-DD-00006

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project **Contract No. CW-I-WP4-2023-05**	ROSETTI MARINO
Document Title:	**Technical Data Sheet for H2 Storage Vessel - V-25001 A-F**	Sheet 4 of 9 Date: 12/09/2024 Rev: 03

Rev	**DESIGN DATA**						
	Design Conditions	Internal	40	Bar (g)	at	-10 / 80	°C
		..External	FV	Bar	at	-10 / 80	°C
		Volume	101.2	m^3			
	Dimension (Nominal)		2.8 ID x 15.5 T/T	m			
	Minimum Design Metal Temp		-29	°C (MDMT)	at	0	Bar (g)
	Operating Conditions	Internal	30	Bar (g)	at	20	°C
	Corrosion Allowance		0	mm			
	Liquid Specific Gravity		Negligible				
	PWHT Required		Per ASME Sect VIII Div 2		☑ Service PWHT	Yes	
	Radiography Requirements		Full (100%)				
	Shop Hydrotest Pressure		57.2 Bar (g) per Code and Pressure Equipment Directive 2014/68/UE				
	Field Hydrotest Pressure		57.2 Bar (g) per Code and Pressure Equipment Directive 2014/68/UE				
	Painting Per		123A90-DDL-MAT-SP-60006				
	Insulation		N/A	mm			
	Fireproofing		N/A	mm			
	Erection Weight		58700	Kg			
	Empty Weight		58700	Kg (Start-Up Ready) - Estimated			
	Operating Weight		58900	Kg - Estimated			
	Test Weight		160400	Kg			
	Vessel Designed For Wind		1 Year Return, 3 sec. gust = 35 m/sec, 100 Year Return, 3 sec. gust = 45 m/sec				
	Vessel Designed For Earthquake		N/A				
	Moment At POS	Wind:	132800/45000	N-M (Transverse/Longitudinal)			
	Shear Force At POS	Wind:	77000/26000	N (Transverse/Longitudinal)			
	Moment At POS	Earthquake:	0	N-M (Operating)	0		N-M (Empty)
	Shear Force At POS	Earthquake:	0	N (Operating)	0		N (Empty)

Rev	**DESIGN CODE & MATERIAL SPECIFICATIONS**				
	Construction Code	**2021 ASME Section VIII Div.2 class 2**	Code Stamp ☑	Yes	National Board Registration ☑ Yes
	Materials for Pressure Components and Parts Welded to Pressure Components,				
	Shell and Heads		SA-516 60 (HIC)		
	Standard ANSI Weld Neck and LWN Flanges		SA-350 LF2 CL.1		
	Fittings		(n.a.) General Note VM-8		
	Self Reinforcing & Special Forgings		SA-350 LF2 CL.1		
	Nozzle Necks		(if any) SA-333 6		
	Shell Attachments	Plate (Including Wear Plate)	SA-516-60		
		Pipe	(if any) SA-333 6		
		Structural Shapes	(if any) S275 J2		
	Materials for Parts Not Welded to Pressure Components:				
	Saddles		A/SA-516 60		
	Plate		A/SA-516-60		
	Pipe		(if any) SA-333 6		
	Pressure Bolting		SA-193-B7 / SA-194-2H		
	Internal Bolting		(if any) A-193 Gr B6 / A-194 Gr 6		
	Internal Piping		Carbon Steel		
	Other Internals		Carbon Steel		
	Gaskets	**Pressure Gaskets**	SW 316 S.S. Graphite filled C/W 316 S.S. Inner Ring & Epoxy Coated C.S. outer ring		
	-	**Non-pressure Gaskets**	n.a.		

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Rev	GENERAL NOTES

VM-1. All materials shown on this data sheet are to be furnished and installed by the Vessel Supplier unless otherwise noted.

VM-2. Substitutions of materials will not be allowed without ROSETTI MARINO prior approval. This approval can only be obtained at the time Vessel Supplier submits his quotation.

VM-3. The inside diameter of manholes shall be equal to the size specified in the table of connections for 18" (450 mm) and smaller size manholes. Manholes size 20" (500 mm) and larger may have a minimum inside diameter 25 mm less than the nominal size listed in the table of connections.

VM-4. Manholes and handholes shall be furnished with blind flange, bolts and gasket. Each manhole shall be provided with a davit or hinge and internal manhole grip.

VM-5. Internal ladder rungs shall be provided below the manway.

VM-6. Vessel Supplier to provide vessel grounding lugs .

VM-8. In addition to meeting Code requirements for fittings, piping fittings shall be made from a material specification listed for plate, forging, or pipe pressure components on page 1 of this data sheet.

VM-9 Regarding pressure retaining parts, vendor is allowed to propose equivalent/similar material, according to other international Codes, i.e. DIN/EN or other internationally recognized CODE, provided that Carbon Equivalent value (CEQ) is 0,35.max

VM-10 Total number of vessels is 6 (six) – V-25001 A/B/C/D/E/F

VM-11 For hydrogen vessel fatigue design, Contractor should expect that the number of full charge/discharge cycles (from full to empty) will be 180 during the year. In other words, it is expected that:
Fuel cell will utilise the full hydrogen inventory from the storage vessels 180 times per year (full discharge).
Electrolyser will fully recharge the hydrogen vessels (from empty to full) 180 times per year (full charge)

WM-13 Max hardness in base metal shall be 235 HV10
Steel shall be HIC resistant to ISO 15156-2
Impact testing shall be at -46°C for base metal and weld metal in H2 service regardless of MDMT
Phosphorus maximum to be 0.015% (from EIGA 121/14)
Max strength 355Mpa yield
max CE of 0.35 should ideally be by product analysis not ladle analysis

VM-14 H2 physical properties at 15°C and 30 barg

Pressure	30	Bar (g)
Temperature	15	°C
Inlet Density	2.58	Kg/m³
Compressibility factor (Z)	1.01	
Viscosity	0.0086	cP
Specific heats Ratio (Cp/Cv)	1.42	
Molecular Weight	2	

VM-15 Area Classification Zone 1 IIB T1 + H2

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TABLE OF CONNECTIONS

Rev

General Notes for Table of Connections:

A. Connections shown in sketch are diagrammatic only. For true location see plan view, end view or orientation below.

B. Unless otherwise noted the dimensions from the face of flange to inside of the vessel shall comply with Table 4 of doc. no. 123A90-DDL-MAC-50026:

C. All pressure connections are to be flanged.

D. Elevations in the table are reference T.L. to the centre of the nozzles.

E. Dimension "A" is the distance from the reference tangent line to the face of flange for nozzles on heads.

F. Flanges over 24" shall be per ASME B16.47 Series B.

G. All flange faces shall have a smooth finish.

H For specific notes to TABLE OF CONNECTIONS see next page.

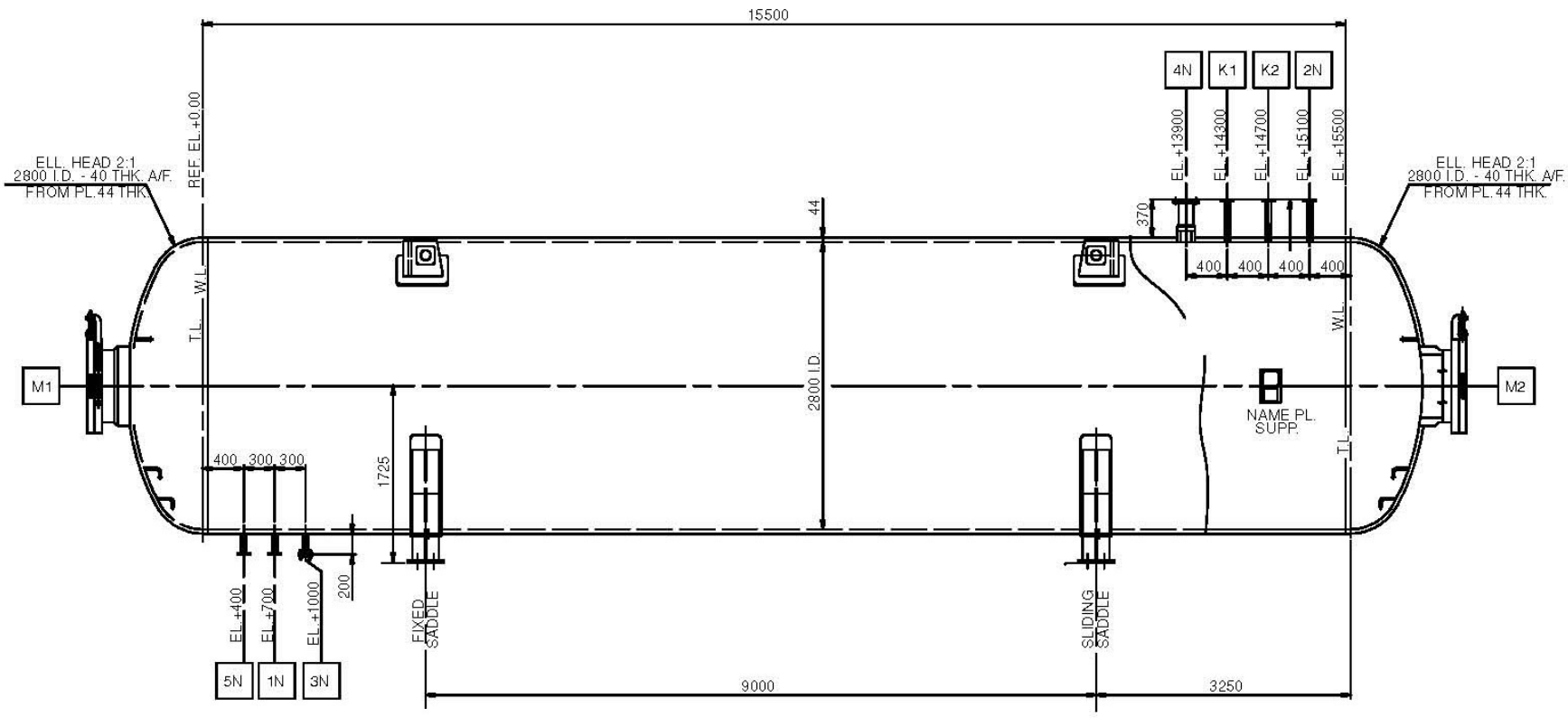
Mark	Size	Rating	Type/Face	Service	Elevation	Dim"A"	Specific Notes
1N	1"	300#	LWN/RF	Hydrogen Inlet	700		
2N	1"	300#	LWN/RF	Hydrogen Outlet	15100		
3N	1"	300#	LWN/RF	Drain with Blind	1000		1
4N	4"	300#	LWN-SR/RF	PSV Connection	13900		
5N	1"	300#	LWN/RF	Nitrogen Purging	400		
K1	1"	300#	LWN/RF	Pressure Transmitter (ESD)	14300		
K2	1"	300#	LWN/RF	Pressure Transmitter (CTRL)	14700		
M1	24"	300#	LWN SR/RF	Manhole C/W Davit		1050	1 See general note VM3
M2	24"	300#	LWN SR/RF	Manhole C/W Davit		1050	1 See general note VM3

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Rev	SPECIFIC NOTES TO TABLE OF CONNECTIONS (All Notes Listed Hereunder Shall Apply Only If Called For By Number In The Table Of Connections)
	1 Supply blind flange, bolts and gasket. 2 Elevation is given to the face of flange. 3 Nozzle size listed is minimum inside diameter of nozzle neck. 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

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Rev	VESSEL SKETCH

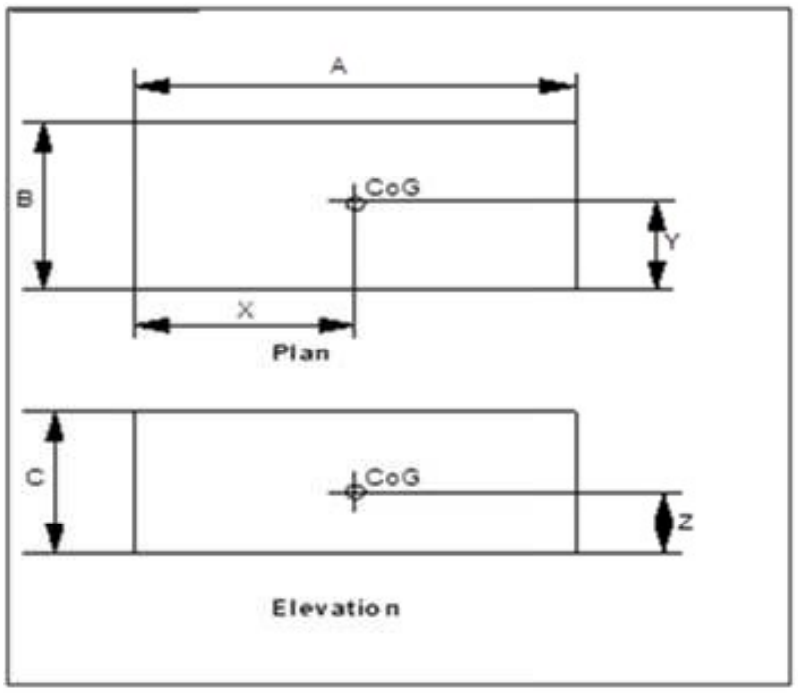


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WEIGHT DATA (kg)

			Areas for Input by Supplier	
Dry Weight	(I)		58620	Kg
Content	(II)		260	Kg
Operating Weight	(I+II)		58880	Kg
Auxiliaries' weight, included in (I) (specify under notes)				Kg
Test weight, i.e. filled with water				Kg
Transport Weight				

CENTRE OF GRAVITY (CoG) DATA FOR INSTALLED DRY CONDITION



Overall dimensions		
A =	17600	mm
B =	2940	mm
C =	3605	mm

CoG location		
X =	8850	mm
Y =	1444	mm
Z =	1690	mm

NOTES

WEIGHTS AND CoG STATUS (TICK OFF AS APPROPRIATE)

☐ Estimated	☑ Calculated
☐ Catalogue data	☐ Weighed

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Section 8 MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE

NOT APPLICABLE

Section 9 MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE

NOT APPLICABLE

Section 10 MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC & discipline : P

Piping	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
013-1-J4	Joint 013-1-J4	ONSHORE	C10003859	TMX27	100	2025-01-24	RFC 1
013-1-J5	Joint 013-1-J5	ONSHORE	C10003860	TMX27	100	2025-01-24	RFC 1
053-1-J1	Joint 053-1-J1	ONSHORE	C10003889	TMX27	100	2025-02-12	RFC 1
053-1-J2	Joint 053-1-J2	ONSHORE	C10003890	TMX27	100	2025-02-12	RFC 1
082-1-J1	Joint 082-1-J1	ONSHORE	C10004259	TMX27	100	2025-02-06	RFC 1
082-1-J2	Joint 082-1-J2	ONSHORE	C10004260	TMX27	100	2025-02-06	RFC 1
082-2-J3	Joint 082-2-J3	ONSHORE	C10004261	TMX27	100	2025-02-06	RFC 1
082-2-J4	Joint 082-2-J4	ONSHORE	C10004262	TMX27	100	2025-02-06	RFC 1
083-1-J1	Joint 083-1-J1	ONSHORE	C10003984	TMX27	100	2025-02-13	RFC 1
083-1-J2	Joint 083-1-J2	ONSHORE	C10003985	TMX27	100	2025-02-13	RFC 1
083-1-J3	Joint 083-1-J3	ONSHORE	C10003986	TMX27	100	2025-02-13	RFC 1
084-1-J1	Joint 084-1-J1	ONSHORE	C10003987	TMX27	100	2025-02-13	RFC 1
084-1-J10	Joint 084-1-J10	ONSHORE	C10003996	TMX27	100	2025-02-12	RFC 1
084-1-J11	Joint 084-1-J11	ONSHORE	C10003997	TMX27	100	2025-02-12	RFC 1
084-1-J2	Joint 084-1-J2	ONSHORE	C10003988	TMX27	100	2025-02-13	RFC 1
084-1-J3	Joint 084-1-J3	ONSHORE	C10003989	TMX27	100	2025-02-13	RFC 1
084-1-J4	Joint 084-1-J4	ONSHORE	C10003990	TMX27	100	2025-02-13	RFC 1
084-1-J5	Joint 084-1-J5	ONSHORE	C10003991	TMX27	100	2025-02-13	RFC 1
084-1-J6	Joint 084-1-J6	ONSHORE	C10003992	TMX27	100	2025-02-13	RFC 1
084-1-J7	Joint 084-1-J7	ONSHORE	C10003993	TMX27	100	2025-02-13	RFC 1
084-1-J8	Joint 084-1-J8	ONSHORE	C10003994	TMX27	100	2025-02-13	RFC 1
084-1-J9	Joint 084-1-J9	ONSHORE	C10003995	TMX27	100	2025-02-13	RFC 1
093-1-J6	Joint 093-1-J6	ONSHORE	C10004044	TMX27	100	2025-01-20	RFC 1
093-1-J7	Joint 093-1-J7	ONSHORE	C10004045	TMX27	100	2025-01-21	RFC 1
093-1-J8	Joint 093-1-J8	ONSHORE	C10004046	TMX27	100	2025-01-24	RFC 1
093-1-J9	Joint 093-1-J9	ONSHORE	C10004047	TMX27	100	2025-01-24	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC & discipline : P

Piping	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
25-05-TP-012	Test Pack 25-05-TP-012	ONSHORE	C10003317	CLX02A	100	2024-12-28	RFC 1
		ONSHORE	C10003318	CLX02B	100	2025-01-29	RFC 1
		ONSHORE	C10003319	CXX02	100	2025-02-05	RFC 1
		ONSHORE	C10003320	TMX03	100	2024-12-31	RFC 1
		ONSHORE	C10003321	TMX05	100	2024-12-31	RFC 1
		ONSHORE	C10003324	TPLX05	100	2024-12-31	RFC 1
25-05-TP-018	Test Pack 25-05-TP-018	ONSHORE	C10003365	CLX02A	100	2025-01-16	RFC 1
		ONSHORE	C10003366	CLX02B	100	2025-02-03	RFC 1
		ONSHORE	C10003367	CXX02	100	2025-02-05	RFC 1
		ONSHORE	C10003368	TMX03	100	2025-01-16	RFC 1
		ONSHORE	C10003369	TMX05	100	2025-01-16	RFC 1
		ONSHORE	C10003372	TPLX05	100	2025-01-16	RFC 1
25-05-TP-036	Test Pack 25-05-TP-036	ONSHORE	C10003505	CLX02A	100	2025-01-07	RFC 2
		ONSHORE	C10003506	CLX02B	100	2025-02-12	RFC 2
		ONSHORE	C10003507	CXX02	100	2025-03-06	RFC 2
		ONSHORE	C10003508	TMX03	100	2025-01-07	RFC 2
		ONSHORE	C10003509	TMX05	100	2025-01-08	RFC 2
		ONSHORE	C10003512	TPLX05	100	2025-01-08	RFC 2
25-05-TP-042	Test Pack 25-05-TP-042	ONSHORE	C10003553	CLX02A	100	2025-01-13	RFC 2
		ONSHORE	C10003554	CLX02B	100	2025-02-20	RFC 2
		ONSHORE	C10003555	CXX02	100	2025-03-06	RFC 2
		ONSHORE	C10003556	TMX03	100	2025-01-14	RFC 2
		ONSHORE	C10003557	TMX05	100	2025-01-14	RFC 2
		ONSHORE	C10003560	TPLX05	100	2025-01-16	RFC 2

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 25-05 & process: MC & discipline : P

Piping	25-05 Hydrogen Storage Vessel E (V-25001E)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
25-05-TP-056	Test Pack 25-05-TP-056	ONSHORE	C10003645	CLX02A	100	2024-12-02	RFC 1
		ONSHORE	C10003646	CLX02B	100	2025-02-07	RFC 1
		ONSHORE	C10003647	CXX02	100	2025-02-11	RFC 1
		ONSHORE	C10003648	TMX03	100	2024-12-06	RFC 1
		ONSHORE	C10003649	TMX05	100	2024-12-06	RFC 1
		ONSHORE	C10003652	TPLX05	100	2024-12-06	RFC 1
TP-006	H2 Inlet System and Storage Vessel V-25001E	ONSHORE	C10004893	TMX25	100	2025-02-26	RFC 1

ITEM	Tag	25-05-TP-012	: Test Pack 25-05-TP-012		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD/LD	
TASK	code	C10003317	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	CLX02A	Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	Note
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	Note
6	Check bolt tightening and flange management (excluded battery limit joints).	NA
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	NA
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check performed on spool not assembled in erection.
Inspection points n.4 and 5 have not been verified in erection, to be checked during flange management.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2024-12-18	2024-12-28	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2024-12-18T05:21:19.054Z	PROVERLIS Digitaly signed by Kangi Albonetti 2024-12-28T12:04:30.554Z	

ITEM	Tag	25-05-TP-012	: Test Pack 25-05-TP-012			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD/LD
TASK	code	C10003318		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	OK
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-28	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-28T14:48:48.270Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:06:08.101Z	

ITEM	Tag	25-05-TP-012	: Test Pack 25-05-TP-012			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD/LD
TASK	code	C10003319		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	PL
3	Check that the fluid direction is correct.	PL
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	PL
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Kangi Albonetti	
Date	2025-02-04	2025-02-05	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-04T12:31:17.212Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-02-05T09:47:00.891Z	

ITEM	Tag	25-05-TP-012	: Test Pack 25-05-TP-012		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD/LD	
TASK	code	C10003320	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	NA	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	30/12/2024	Start time	09:30	End time	09:40
Flow rate	NA	Duration	10 min	Medium T°	NA

Operation Description	Connected the water source to the lowest point of the piping system. Maintained a high flow rate to help dislodging and carry away debrises. Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.
Safety Precautions	Restricting access to the area.
Result and comments	Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2024-12-30	2024-12-31	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2024-12-30T12:07:31.174Z	PROVERLIS Digitaly signed by Kangi Albonetti 2024-12-31T09:29:18.530Z	

ITEM	Tag	25-05-TP-012	: Test Pack 25-05-TP-012		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD/LD	
TASK	code	C10003321	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	40 barg	Max test pressure	60 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2024-12-30	2024-12-31	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2024-12-30T12:07:43.310Z	PROVERLIS Digitaly signed by Kangi Albonetti 2024-12-31T09:31:46.692Z	

Logger protocol

Protocollo di acquisizione elenco dati

Log no. *N. elenco dati*	123A90-25-TP-8/9/10/11/12/13

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FOOB2N
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:0E:DE:AF)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:59:04
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	12:03:29 pm

Logger protocol

Protocollo di acquisizione elenco dati

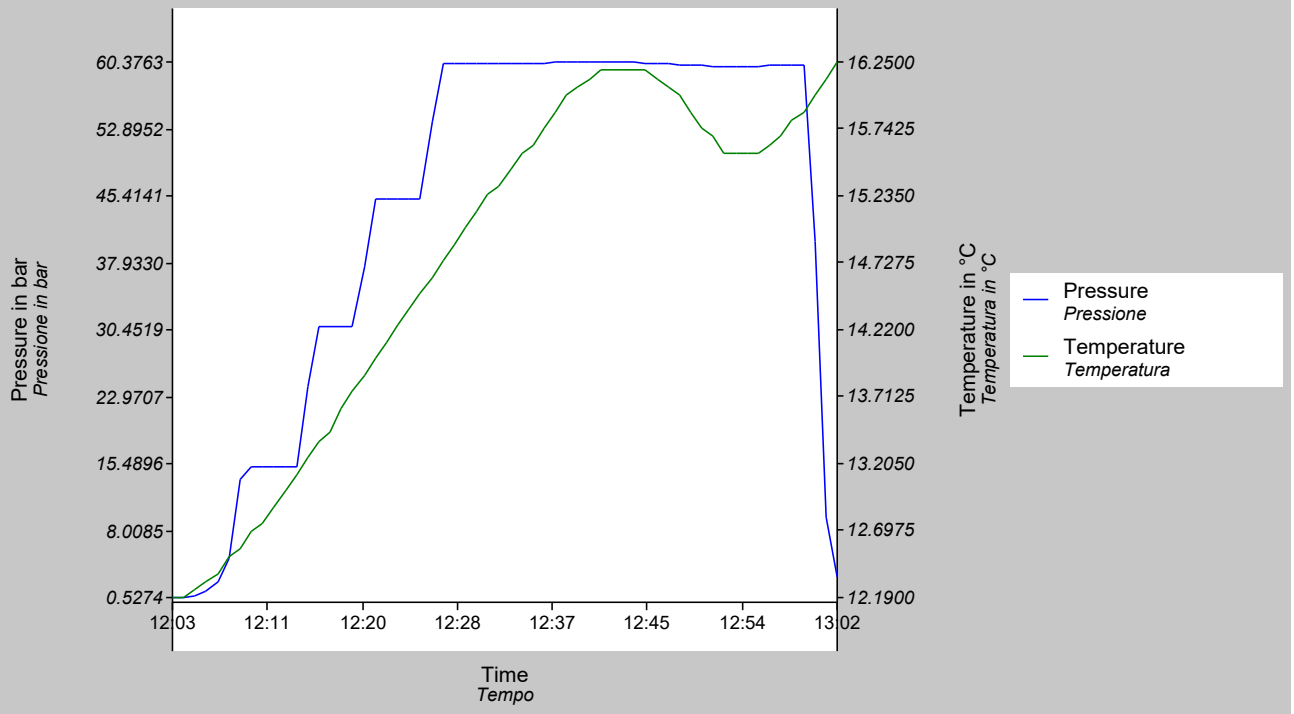
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-25-TP-8/9/10/11/12/13

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
12/30/2024 12:03:29.000	0.5274	12.1900
12/30/2024 12:04:29.000	0.5618	12.1900
12/30/2024 12:05:29.000	0.7832	12.2500
12/30/2024 12:06:29.000	1.2705	12.3100
12/30/2024 12:07:29.000	2.2691	12.3700
12/30/2024 12:08:29.000	4.9984	12.5000
12/30/2024 12:09:29.000	13.7697	12.5600
12/30/2024 12:10:29.000	15.1351	12.6900
12/30/2024 12:11:29.000	15.1300	12.7500
12/30/2024 12:12:29.000	15.1205	12.8700
12/30/2024 12:13:29.000	15.1205	13.0000
12/30/2024 12:14:29.000	15.1202	13.1200
12/30/2024 12:15:29.000	24.1721	13.2500
12/30/2024 12:16:29.000	30.8686	13.3700
12/30/2024 12:17:29.000	30.8664	13.4400
12/30/2024 12:18:29.000	30.8715	13.6200
12/30/2024 12:19:29.000	30.8759	13.7500

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-25-TP-8/9/10/11/12/13
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
12/30/2024 12:20:29.000	37.5234	13.8700
12/30/2024 12:21:29.000	45.0919	14.0000
12/30/2024 12:22:29.000	45.0843	14.1200
12/30/2024 12:23:29.000	45.0939	14.2500
12/30/2024 12:24:29.000	45.1055	14.3700
12/30/2024 12:25:29.000	45.1171	14.5000
12/30/2024 12:26:29.000	53.7032	14.6200
12/30/2024 12:27:29.000	60.1131	14.7500
12/30/2024 12:28:29.000	60.1221	14.8700
12/30/2024 12:29:29.000	60.1180	15.0000
12/30/2024 12:30:29.000	60.1258	15.1200
12/30/2024 12:31:29.000	60.1507	15.2500
12/30/2024 12:32:29.000	60.1773	15.3100
12/30/2024 12:33:29.000	60.2123	15.4400
12/30/2024 12:34:29.000	60.2334	15.5600
12/30/2024 12:35:29.000	60.2570	15.6200
12/30/2024 12:36:29.000	60.2861	15.7500
12/30/2024 12:37:29.000	60.3147	15.8700
12/30/2024 12:38:29.000	60.3368	16.0000
12/30/2024 12:39:29.000	60.3556	16.0600
12/30/2024 12:40:29.000	60.3704	16.1200
12/30/2024 12:41:29.000	60.3763	16.1900
12/30/2024 12:42:29.000	60.3715	16.1900
12/30/2024 12:43:29.000	60.3563	16.1900
12/30/2024 12:44:29.000	60.3218	16.1900
12/30/2024 12:45:29.000	60.2844	16.1900
12/30/2024 12:46:29.000	60.2253	16.1200
12/30/2024 12:47:29.000	60.1657	16.0600
12/30/2024 12:48:29.000	60.1019	16.0000
12/30/2024 12:49:29.000	60.0314	15.8700
12/30/2024 12:50:29.000	59.9733	15.7500
12/30/2024 12:51:29.000	59.9248	15.6900
12/30/2024 12:52:29.000	59.8933	15.5600
12/30/2024 12:53:29.000	59.8889	15.5600
12/30/2024 12:54:29.000	59.8929	15.5600
12/30/2024 12:55:29.000	59.9049	15.5600
12/30/2024 12:56:29.000	59.9395	15.6200
12/30/2024 12:57:29.000	59.9697	15.6900
12/30/2024 12:58:29.000	60.0031	15.8100
12/30/2024 12:59:29.000	60.0470	15.8700
12/30/2024 13:00:29.000	40.3110	16.0000
12/30/2024 13:01:29.000	9.4188	16.1200
12/30/2024 13:02:29.000	2.7874	16.2500

Kalibrierschein / Calibration Certificate

gem. DIN EN ISO/IEC 17025:2018 / acc. DIN EN ISO/IEC 17025:2018

erstellt durch das Kalibrierlaboratorium
issued by the calibration laboratory

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg

DAkkS Deutsche Akkreditierungsstelle D-K-15105-01-00

Mitglied im Deutschen Kalibrierdienst
Member of the Deutscher Kalibrierdienst

Kalibrierzeichen
Calibration mark

C01107773144
D-K-15105-01-00
2024-06

Gegenstand *Object*	Elektrisches Druckmessgerät Electrical pressure gauge
Hersteller *Manufacturer*	WIKA Alexander-Wiegand-Straße 30 DE-63911 Klingenberg
Typ *Type*	CPG1500
Fabrikat/Serien-Nr. *Serial number*	1A037FOOB2N
Auftraggeber *Customer*	ROSETTI MARINO SPA Via Del Marchesato, 37 Marina di Ravenna (RA) IT 48122 Ravenna
Auftragsnummer *Order No.*	S000343115/1
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	4
Datum der Kalibrierung *Date of calibration*	18.06.2024

Dieser Kalibrierschein dokumentiert die metrologische Rückführbarkeit auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Die DAkkS ist Unterzeichner der multilateralen Übereinkommen der European co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

This calibration certificate documents the metrological traceability to national standards, which realize the units of measurement according to the International System of Units (SI).
The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.
The user is obliged to have the object recalibrated at appropriate intervals.

Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung des ausstellenden Kalibrierlaboratoriums. Kalibrierscheine ohne Unterschrift haben keine Gültigkeit.

This calibration certificate may not be reproduced other than in full except with the permission of the issuing laboratory. Calibration certificates without signature are not valid.

Datum *Date*	Stellv. Leiter des Kalibrierlaboratoriums *Ass. head of calibration laboratory*	Bearbeiter *Person in charge*
18.06.2024	Roland Schüßler	Christian Wunder

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Fax +49 9372 132-8005049
www.wika.de
CTserviceteam@wika.com

WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Kalibriergegenstand (KG)
Device under test (DUT)

Elektrisches Druckmessgerät *Electrical pressure gauge*	
Typ *Model*	CPG1500
Seriennummer *Serial number*	1A037FOOB2N
Anzeigebereich *Scale range*	(0 ... 1000) bar g
Genauigkeit *Accuracy*	0,1 % FS
Auflösung (Skalenwert) *Resolution (scale division)*	0,1 bar
Messstellen-Nr. *Tag number*	

Kalibrierverfahren
Calibration procedure

Die Kalibrierung erfolgte nach der Richtlinie DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) Ablauf B, durch direkten Vergleich der Messwerte des Kalibriergegenstandes mit denen des Bezugs- oder Gebrauchsnormales. Der Kalibrierschein wurde mit WIKA-Cal Version 2.11.0.213 erstellt.
Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard. The calibration certificate has been created with WIKA-Cal version 2.11.0.213.

Ort der Kalibrierung
Place of calibration

Klingenberg Kalibrierlabor 2 *Klingenberg calibration laboratory 2*	g = (9,8100531 ± 0,00002) m/s²

Messbedingungen
Measurement conditions

Gebrauchsnormal (GN) Druckcontroller *Working standard (WS) Pressure controller*	
Typ *Model*	CPC8000
Kalibrierzeichen *Calibration mark*	07072415
Anzeigebereich *Scale range*	(0 ... 1000) bar g
Genauigkeit *Accuracy*	0,01 % FS

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WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Aufbau *Assembly*	
Druckübertragungsmedium *Pressure transmission medium*	Wasser *water*
Bezugsebene (für Referenzwert) *Reference height (for reference value)*	Dichtfläche KG *Sealing face DUT*
Lage bei der Kalibrierung *Position during calibration*	senkrecht *vertical*

Umgebungsbedingungen
Ambient conditions

Temperatur *Temperature*	(23,6 ± 0,5) °C
Atmosphärischer Luftdruck *Atmospheric pressure*	(997,7 ± 0,1) hPa
rel. Luftfeuchte *rel. humidity*	(40 ± 5) %

Messergebnisse
Measurement results

Referenzwert GN *Reference value WS* bar	Ablesung KG *Reading DUT* bar		
	↑	↓	↑
0,00	0,0	0,0	0,0
125,00	125,0	125,1	125,0
250,00	250,1	250,1	250,1
375,00	375,0	375,2	375,0
500,00	500,1	500,1	500,0
625,00	625,0	625,0	625,0
750,00	749,9	750,0	749,9
875,00	874,9	874,8	874,9
1000,00	999,9	999,9	999,9

Messunsicherheit
Measurement uncertainty

Referenzwert GN *Reference value WS* bar	Mittelwert *Mean value* bar	Messabweichung *Deviation* bar	Wiederholbarkeit *Repeatability* bar	Hysterese *Hysteresis* bar	Messunsicherheit *Meas. uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
125,00	125,1	0,1	0,0	0,1	0,40
250,00	250,1	0,1	0,0	0,0	0,40
375,00	375,1	0,1	0,0	0,2	0,40
500,00	500,1	0,1	0,1	0,0	0,40
625,00	625,0	0,0	0,0	0,0	0,40
750,00	750,0	0,0	0,0	0,1	0,40
875,00	874,9	-0,1	0,0	0,1	0,40
1000,00	999,9	-0,1	0,0	0,0	0,40

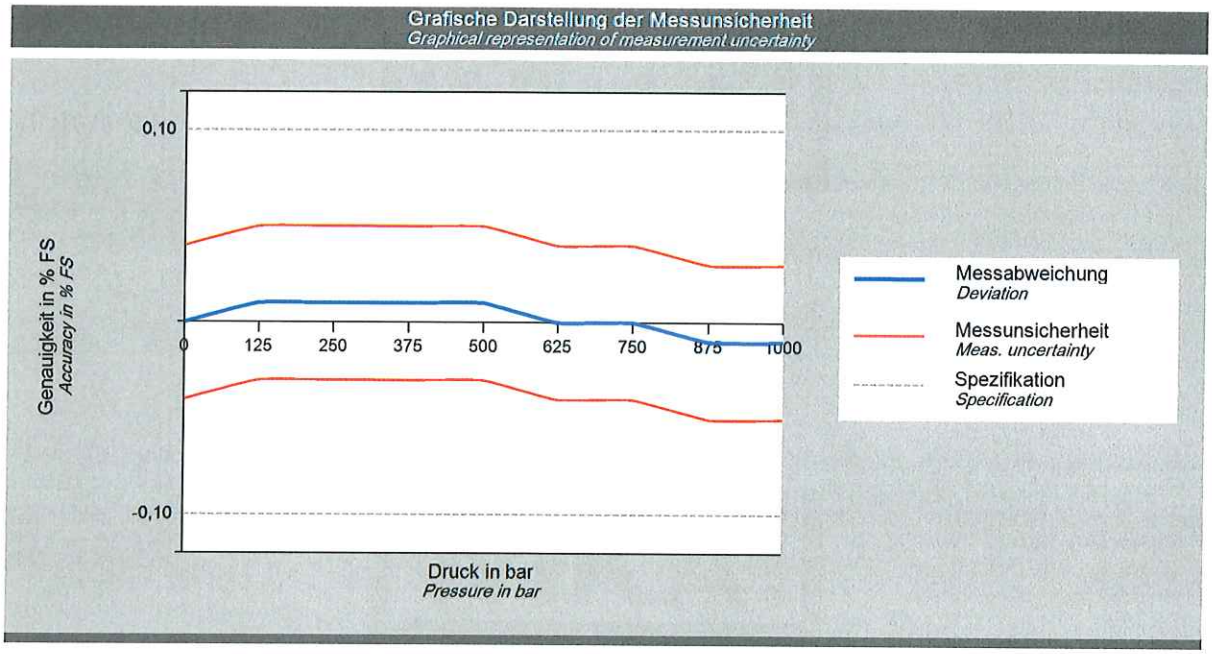
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WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Angegeben ist die erweiterte Messunsicherheit, die sich aus der Standardmessunsicherheit durch Multiplikation mit dem Erweiterungsfaktor k = 2 ergibt. Sie wurde gemäß EA-4/02 M ermittelt. Der Wert der Messgröße liegt mit einer Wahrscheinlichkeit von etwa 95 % im zugeordneten Werteintervall.
The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k = 2. It has been determined in accordance with EA-4/02 M. The value of the measurand lies within the assigned range of values with a probability of approx. 95 %.



Die Genauigkeit des KG beträgt 0,50 bar
The accuracy of the DUT is 0.50 bar

Konformitätsaussage
Statement of compliance

Der Kalibriergegenstand hält die geforderte Spezifikation ein!
The calibration item keeps the required specification!

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Base Load Power Hub (BLPH)

TEST PACK

N°25-05-TP-012
SUB-SYSTEM N° 25-05

System	25
Sub-System	25-05
Test Pressure	60 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

List of Contents

1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
   - 8.1 CLX02A - Pipework Before test
   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation – NOT APPLICABLE
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

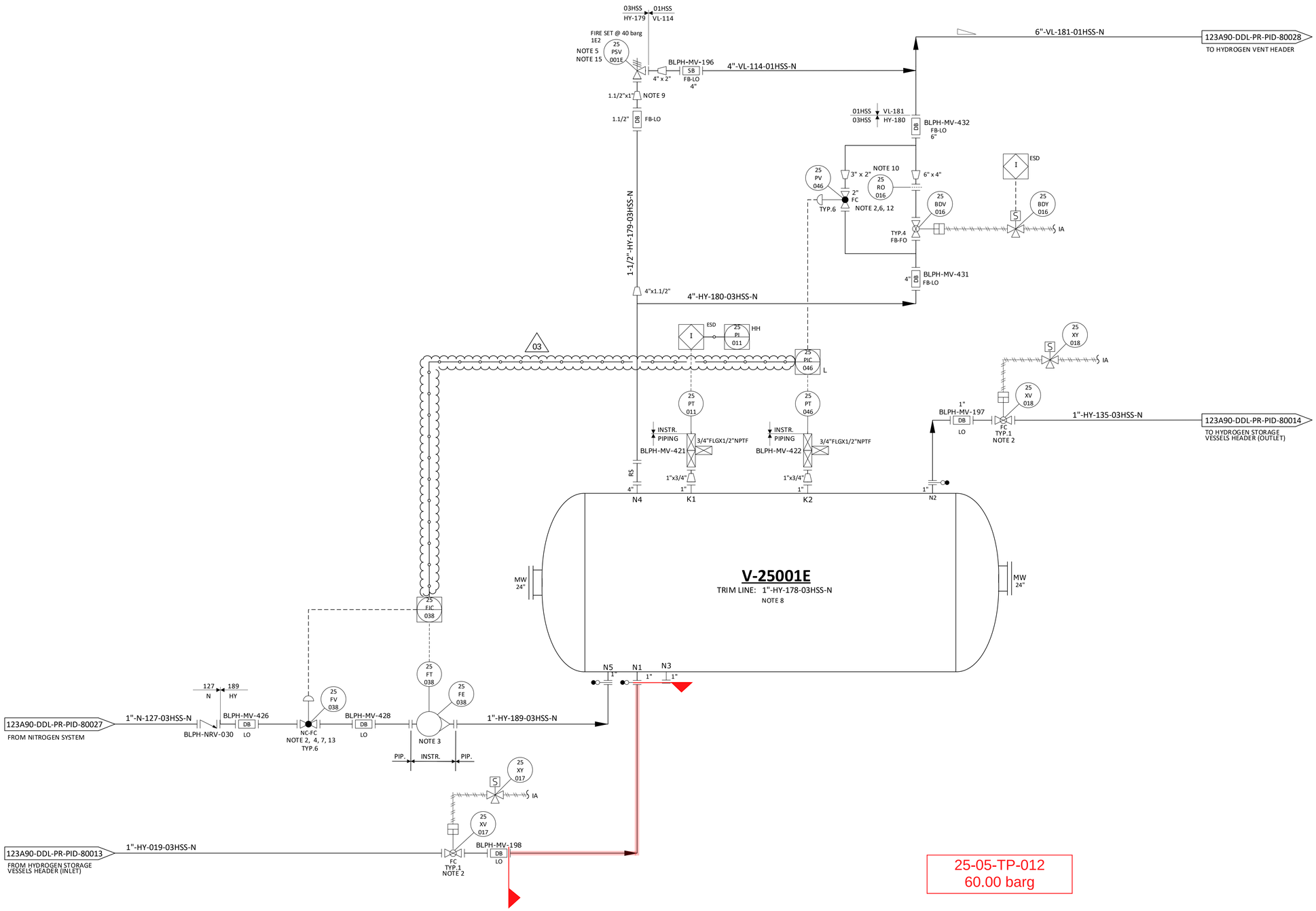
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



25-05-TP-012
60.00 barg

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

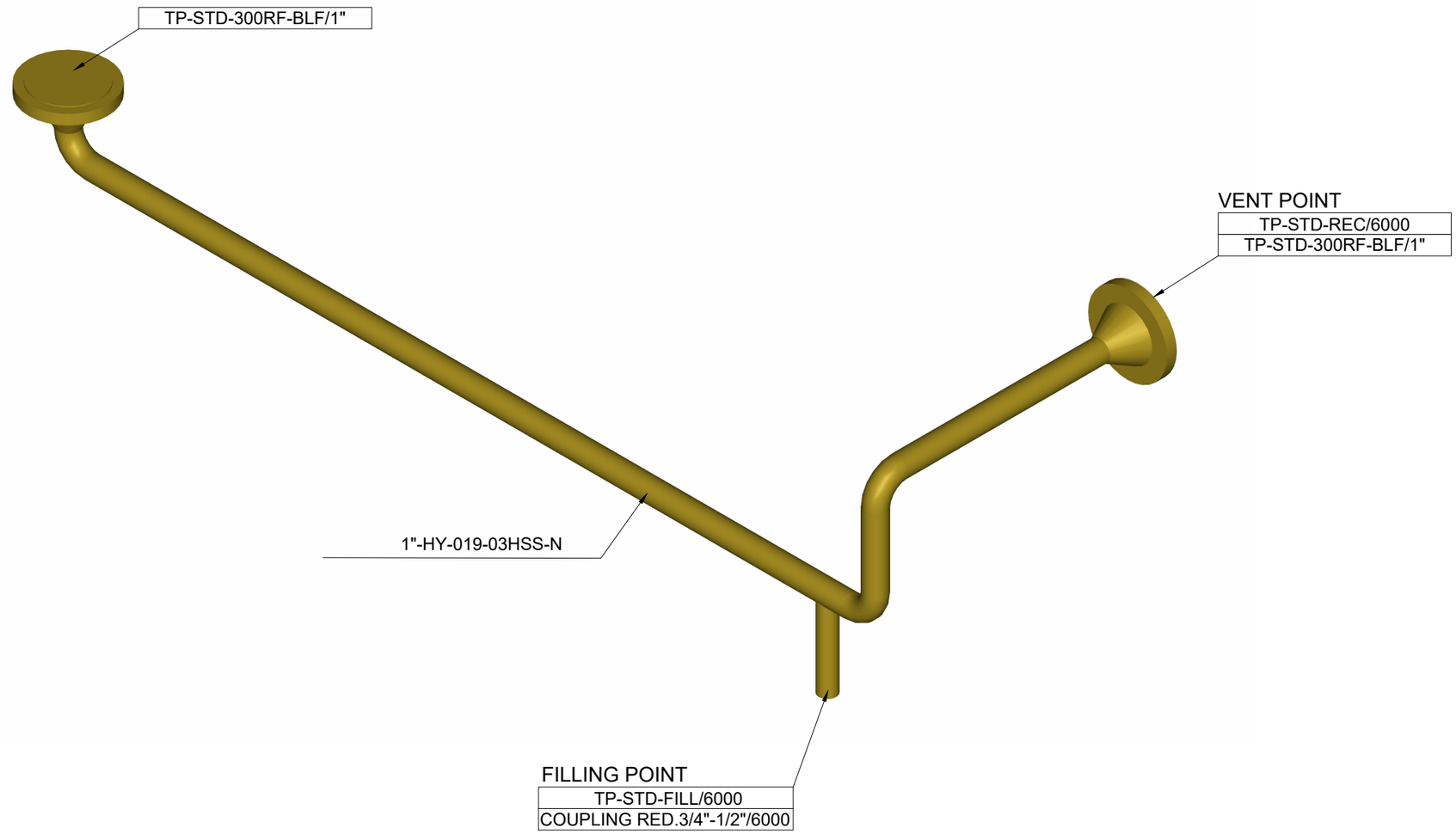
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE		
A1	DRAWING NO. 123A90-DDL-PR-PID-80019			SHEET 001	REV. 03

File Name = FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



25-05-TP-012

60 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
25-05-TP-012

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

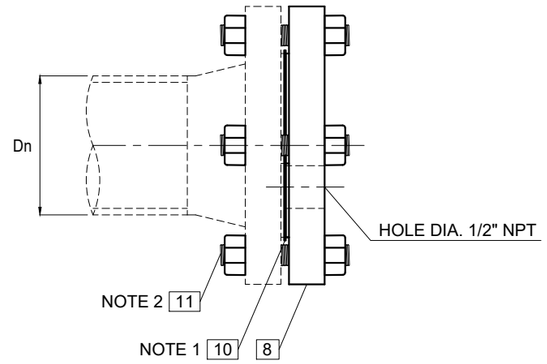
CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-012	/	CPLRSS00233Q0H	Coupling Reducing ASME B16.11 THRD-F NPT 6000# FRG ASTM A182 Gr.F316/316L	-	-	1	
TP-012	TP-STD-300RF-BLF/1"	FLBHCS0018010H	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1	2	2	
TP-012	TP-STD-300RF-BLF/1"	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ø1" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-012	TP-STD-300RF-BLF/1"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	

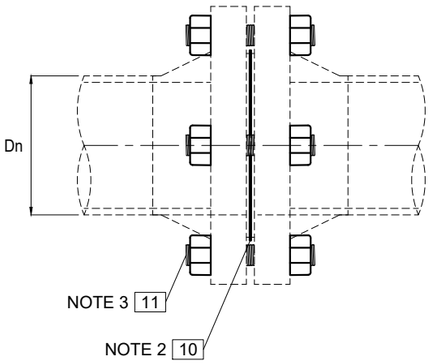
TP-STD-300RF | 300 RF | STANDARD FOR BLIND POINT

TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

MATERIAL LIST			
STD	**POS.**	**DESCRIPTION**	**Q.TY**
TP-STD-300RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-300RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=75 MM	4
TP-STD-300RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=80 MM	4
TP-STD-300RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-300RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=95 MM	4
TP-STD-300RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-300RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-300RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-300RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=115 MM	8
TP-STD-300RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=125 MM	12
TP-STD-300RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=145 MM	12
TP-STD-300RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=160 MM	16
TP-STD-300RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=175 MM	16
TP-STD-300RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=180 MM	20
TP-STD-300RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=195 MM	20
TP-STD-300RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=200 MM	24
TP-STD-300RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=210 MM	24
TP-STD-300RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/2" L=235 MM	24



TP-STD-300RF-BLF/Dn
BLIND FLANGE



TP-STD-300RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

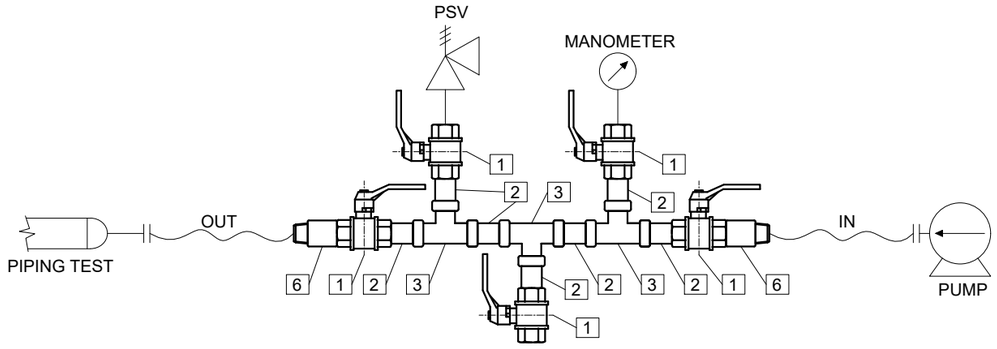
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-300RF
TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_300RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

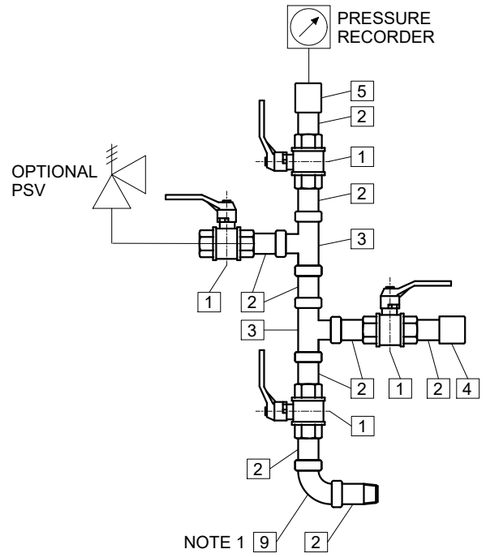
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
13	HY-019	019	1	03HSS	N	3,38	40S	N/A	1"-HY-019-03HSS-N	123A90-DDL-PR-PID-80019	40,00	25	25-05 / 25-07	TP-007/TP-012	Water	60.00	Hydrogen	Stainless Steel	INF	II	6A	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

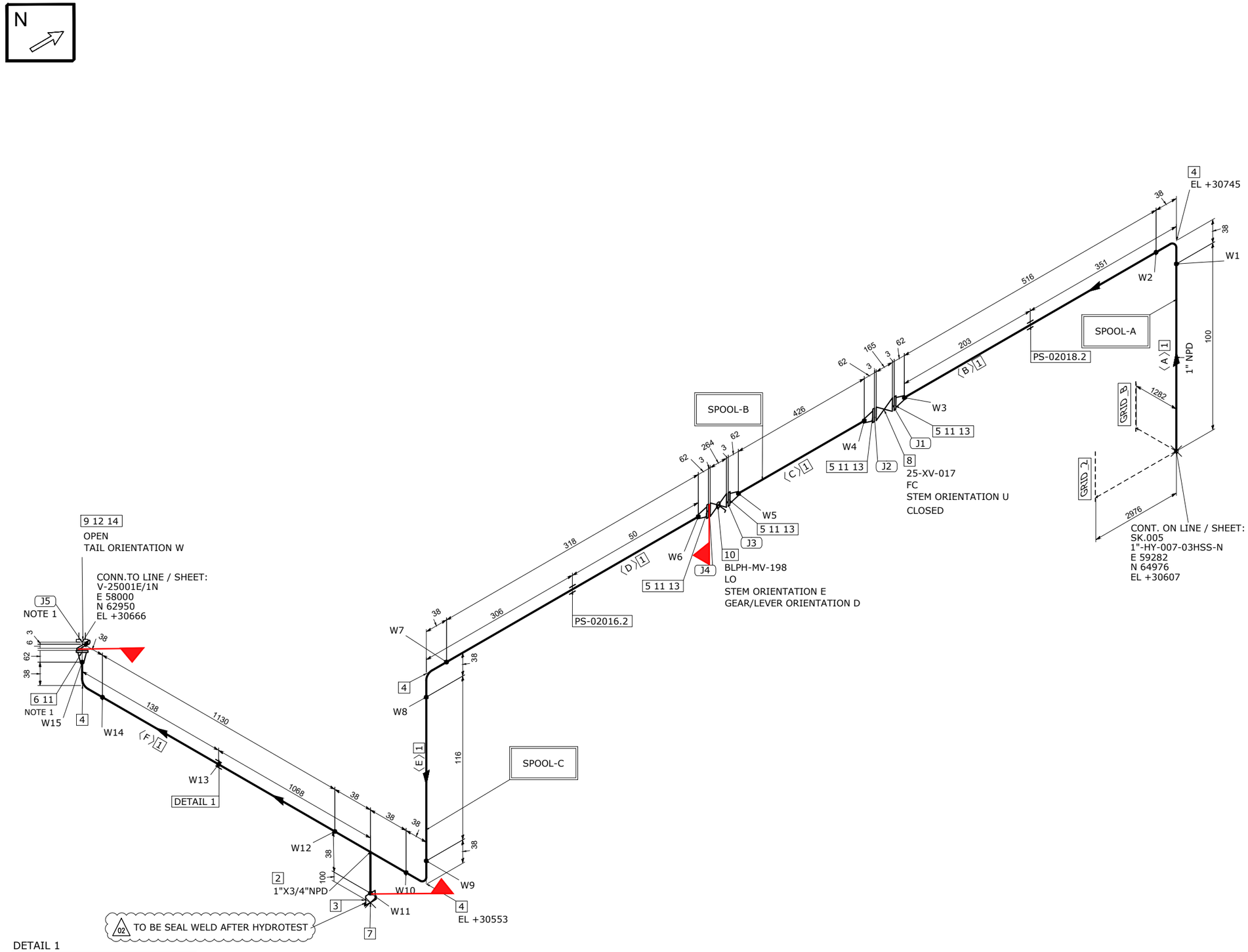
REV. **05**

TITLE

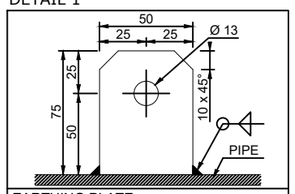
SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
17	123A90-FDL-PP-DI-00013-01	**013**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-HY-019-03HSS-N	30/07/2024	03/09/2024	17/09/2024											**02**	**05**		**TP-007/ITP-012**



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	2.6M	6.6
2	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	1	0.2
4	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	4	0.6
5	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	4	7.3
6	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	1	0.2
8	1		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	41.0
9	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
10	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	13.5
11	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	5	0.4
12	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
13	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	3.7
14	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	16.8
ERECTION WEIGHT [kg]	60.4
OVERALL WEIGHT [kg]	76.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	3/4	BW
W12	1	BW
W13		FW
W14	1	BW
W15	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL
B	1	516	BEVEL	BEVEL
C	1	426	BEVEL	BEVEL
D	1	318	BEVEL	BEVEL
E	1	116	BEVEL	BEVEL
F	1	1130	BEVEL	BEVEL

SUPPORT LIST

PS-02018.2
PS-02016.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	3	3.5
B	2	4.7
C	8.75	8.5
MONT	0	60.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-019-03HSS-N

SK.013

25-05-TP-012

MASTER

LINE DATA								
NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

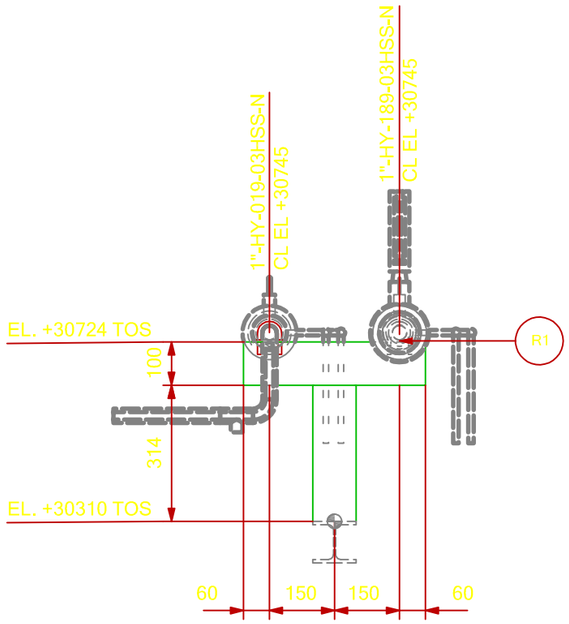
NOTES
1.JACKSCREWS POSITION N/S

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	17-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00013		SHEET / OF	1/1
			REV.	02

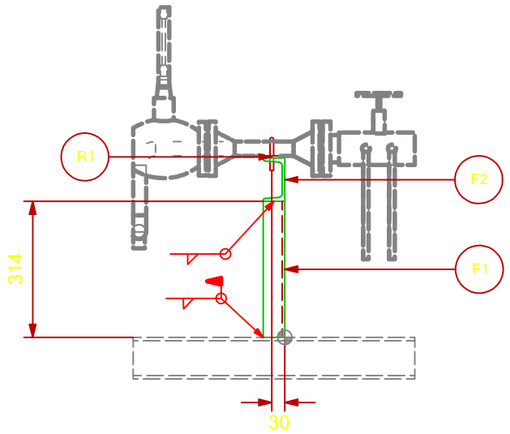
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

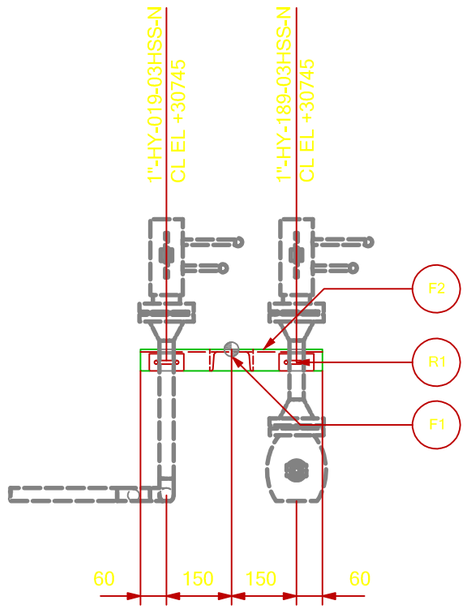
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS / STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-02016	B2	PIP	UPPER DECK		1"-HY-019-03HSS-N	S-211 - 1"		1	0,286	0,000	00	19/08/2024	IFR		TP-012



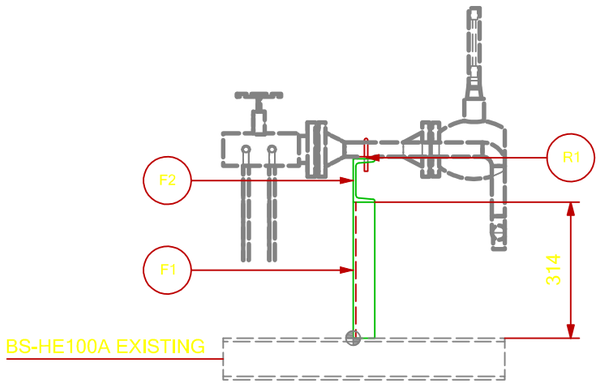
VIEW LOOKING NORTH



VIEW LOOKING WEST



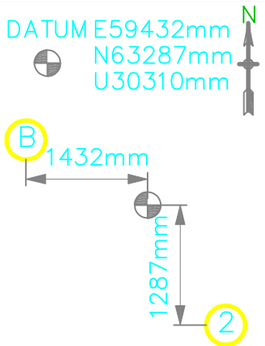
PLAN VIEW

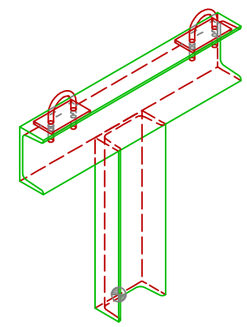


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-1"	-	-	2	-	0,29	-
F1	BEAM	UPN100	Carbon Steel	314	1	10,57	3,31	0,119
F2	BEAM	UPN100	Carbon Steel	420	1	10,57	4,44	0,159
						TOTAL	8,3	0,28





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02016

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

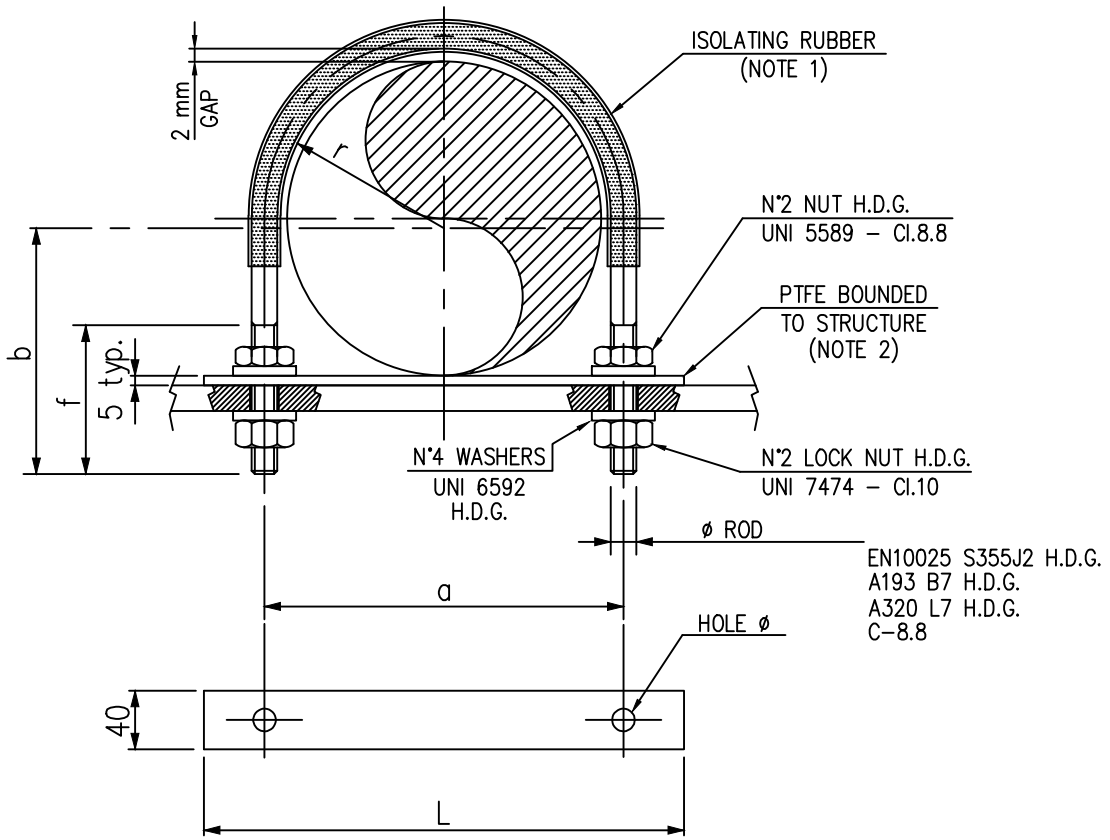
Revision: 0

Date: –

CAVALLOTTI GALVANIZZATI DI GUIDA PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS GUIDE FOR C.S. S.S. AND ALLOY PIPES (NON GRIP)

S–211

Example of designation : STD – PIPE ND"
(S–211 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1
2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

Documento di proprietà aziendale.La Società tutelerà i propri diritti a termine di legge.This document is Company property. The Company lawfulliy reserves all rights.

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	13	**To**	13
Sheet		**From**	1	**To**	1
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**	C	**To**	C
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
6/13/1/_		**02**	**28-10-2024**	**56**	**AZ36**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**03-11-2024**	**C**
03HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				29-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000788	4	Acceptable				03-11-2024				
7/13/1/_		**02**	**29-10-2024**	**58**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**03-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000791	4	Acceptable				03-11-2024				
8/13/1/_		**02**	**28-10-2024**	**56**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**03-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				29-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000789	4	Acceptable				03-11-2024				
9/13/1/_		**02**	**28-10-2024**	**56**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**03-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				29-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000790	4	Acceptable				03-11-2024				
10/13/1/_		**02**	**04-11-2024**	**62**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**06-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				05-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000831	4	Acceptable				06-11-2024				
11/13/1/_		**02**	**04-11-2024**	**67**	**AZ39**			**TEE**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**06-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				06-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000846	4	Acceptable				06-11-2024				
12/13/1/_		**02**	**29-10-2024**	**58**	**AZ36**			**TEE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**03-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000792	4	Acceptable				03-11-2024				
13/13/1/_		**02**	**29-10-2024**	**58**	**AZ36**			**PL**	**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**05-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-10-2024				
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000033		Acceptable				05-11-2024				
14/13/1/_		**02**	**29-10-2024**	**58**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**03-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000793	4	Acceptable				03-11-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M	Material / Techn. Weld.	WPS / Defect length	Techn. Weld. / CND date	Type Conn / NOTE	Accept. Date	Spool
14/13/1/_		**02**	**29-10-2024**	**58**	**AZ36**		**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**03-11-2024**	**C**
15/13/1/_		**02**	**28-10-2024**	**56**	**AZ36**		**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**04-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					29-10-2024			
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000808	4	Acceptable					04-11-2024			

Totals per DWG	**13**	**Prefabrication**	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Accepted	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Accepted	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Accepted	**0,93 m**	**10 Nr. Welds**	**8,75 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by	
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:	
Progetto/Project	**Hollandse Kust Noord Wind Park Project**				
Commessa/Job	**123A90 - Piping**				
Disciplina/Discipline	**PIPING**				
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 17/12/2024	
RosettiDoc.Num.	**123A90MTR001**				

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
13	02	1	C	03HSS	2	1	Tee Reducing BW ›1"x3/4" Thk.3.38mmx2.87mm ASTM A403 Gr.WP316/316L	EF6171	1724000839	00560	JNDIA2023-GW1177-01	W10-W11-W12	
13	02	1	C	03HSS	3	1	Nipple L=100mm TOE ›3/4" Thk.2,87mm ASTM A312 Gr.TP316/316L	SZ8	1724001267	00260	002978	W11	
13	02	1	C	03HSS	4	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W7-W8	
13	02	1	C	03HSS	4	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W9-W10	
13	02	1	C	03HSS	4	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W14-W15	
13	02	1	C	03HSS	5	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DL364	1724000839	01010	12/230044598/27/REV-00	W6	
13	02	1	C	03HSS	6	1	Flange WN For Jackscrews ›1" Thk.3,38mm 300LB RF ASTM A182 Gr.F316/316L	S-27133	1724001267	00160	IND.21.6268/QM/U	W15	
13	02	1	C	03HSS	1D	0,318	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
13	02	1	C	03HSS	1E	0,116	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
13	02	1	C	03HSS	1F	1,13	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
13	02	1	C	03HSS	MESSA A TERRA	1	MESSA A TERRA PL75 x 50 x 5 thk. FORO Ø13	43076	1724000275	00010	929116/002	W13	

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	25-05-TP-012	: Test Pack 25-05-TP-012			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD/LD
TASK	code	C10003324		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA

5	Valve body cavity, branches, etc.. Have been drained form residual water	
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	None

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2024-12-30	2024-12-31	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2024-12-30T12:07:54.919Z	PROVERLIS Digitaly signed by Kangi Albonetti 2024-12-31T10:11:27.399Z	

ITEM	Tag	25-05-TP-018	: Test Pack 25-05-TP-018		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003365	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	CLX02A	Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	PL
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	PL
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	NA
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	OK
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	OK
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check of the TP performed on spools not assembled in erection.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-16	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T15:14:41.407Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-16T07:36:37.999Z	

ITEM	Tag	25-05-TP-018	: Test Pack 25-05-TP-018			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003366		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	OK
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-31	2025-02-03	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-31T14:24:38.804Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-03T10:42:52.102Z	

ITEM	Tag	25-05-TP-018	: Test Pack 25-05-TP-018			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003367		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	PL
3	Check that the fluid direction is correct.	PL
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	PL
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Kangi Albonetti	
Date	2025-02-04	2025-02-05	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-04T12:33:36.639Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-02-05T11:56:39.545Z	

ITEM	Tag	25-05-TP-018	: Test Pack 25-05-TP-018		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003368	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity	PIP	Discipline	Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	15/01/2025	Start time	14:40	End time	14:45
Flow rate	NA	Duration	5 min	Medium T°	NA

Operation Description	Connected the water source to the lowest point of the piping system. Maintained a high flow rate to help dislodging and carry away debrises. Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.
Safety Precautions	Restricting access to the area.
Result and comments	Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-16	2025-01-16	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-16T13:01:14.127Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-16T15:32:52.674Z	

ITEM	Tag	25-05-TP-018	: Test Pack 25-05-TP-018		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003369	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure: 123A90-PML-QHSE-PRO-00092

Design pressure: 40 barg | Max test pressure: 60 barg | Min hold period: 30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium: WATER

TEST RESULTS

Test date: See attachment | Start time: See attachment | End time: See attachment

Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min: See attachment	Max: See attachment		Variation: See attachment	
Line has been depressurised to	NA			At maximum of bar/min: See attachment	
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes

If required produce Red Line Mark Up for "AS BUILT".

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-16	2025-01-16	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-16T13:01:26.700Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-16T15:38:28.638Z	

Logger protocol

Protocollo di acquisizione elenco dati

Log no. *N. elenco dati*	123A90-25_TP14/15/16/17/18/19*

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FOOB2N
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:0E:DE:AF)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	30000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	01:10:15
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:55:16 pm

Logger protocol

Protocollo di acquisizione elenco dati

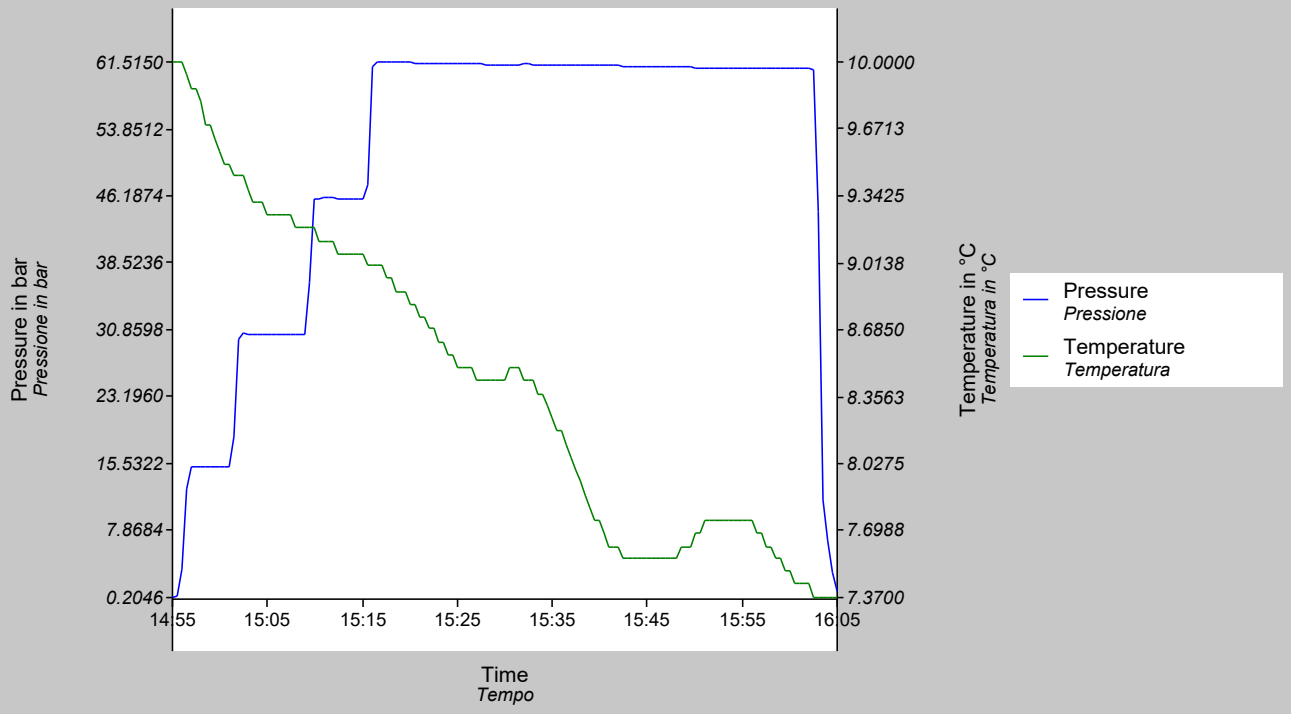
ROSETTI MARINO
Group of Companies

Log no. 123A90-25_TP14/15/16/17/18/19*
N. elenco dati

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/15/2025 14:55:16.000	0.2046	10.0000
01/15/2025 14:55:46.000	0.3318	10.0000
01/15/2025 14:56:16.000	3.3762	10.0000
01/15/2025 14:56:46.000	12.6651	9.9400
01/15/2025 14:57:16.000	15.1999	9.8700
01/15/2025 14:57:46.000	15.1899	9.8700
01/15/2025 14:58:16.000	15.1774	9.8100
01/15/2025 14:58:46.000	15.1653	9.6900
01/15/2025 14:59:16.000	15.1463	9.6900
01/15/2025 14:59:46.000	15.1319	9.6200
01/15/2025 15:00:16.000	15.1230	9.5600
01/15/2025 15:00:46.000	15.1161	9.5000
01/15/2025 15:01:16.000	15.1172	9.5000
01/15/2025 15:01:46.000	18.5678	9.4400
01/15/2025 15:02:16.000	29.6958	9.4400
01/15/2025 15:02:46.000	30.4126	9.4400
01/15/2025 15:03:16.000	30.3934	9.3700

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-25_TP14/15/16/17/18/19*
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/15/2025 15:03:46.000	30.3778	9.3100
01/15/2025 15:04:16.000	30.3808	9.3100
01/15/2025 15:04:46.000	30.3688	9.3100
01/15/2025 15:05:16.000	30.3741	9.2500
01/15/2025 15:05:46.000	30.3752	9.2500
01/15/2025 15:06:16.000	30.3728	9.2500
01/15/2025 15:06:46.000	30.3647	9.2500
01/15/2025 15:07:16.000	30.3595	9.2500
01/15/2025 15:07:46.000	30.3558	9.2500
01/15/2025 15:08:16.000	30.3456	9.1900
01/15/2025 15:08:46.000	30.3281	9.1900
01/15/2025 15:09:16.000	30.3111	9.1900
01/15/2025 15:09:46.000	36.2214	9.1900
01/15/2025 15:10:16.000	45.8661	9.1900
01/15/2025 15:10:46.000	45.8897	9.1200
01/15/2025 15:11:16.000	45.9351	9.1200
01/15/2025 15:11:46.000	45.9286	9.1200
01/15/2025 15:12:16.000	45.9188	9.1200
01/15/2025 15:12:46.000	45.9161	9.0600
01/15/2025 15:13:16.000	45.9049	9.0600
01/15/2025 15:13:46.000	45.9007	9.0600
01/15/2025 15:14:16.000	45.8891	9.0600
01/15/2025 15:14:46.000	45.8826	9.0600
01/15/2025 15:15:16.000	45.8770	9.0600
01/15/2025 15:15:46.000	47.4404	9.0000
01/15/2025 15:16:16.000	60.9500	9.0000
01/15/2025 15:16:46.000	61.5150	9.0000
01/15/2025 15:17:16.000	61.5122	9.0000
01/15/2025 15:17:46.000	61.4952	8.9400
01/15/2025 15:18:16.000	61.4731	8.9400
01/15/2025 15:18:46.000	61.4588	8.8700
01/15/2025 15:19:16.000	61.4491	8.8700
01/15/2025 15:19:46.000	61.4445	8.8700
01/15/2025 15:20:16.000	61.4252	8.8100
01/15/2025 15:20:46.000	61.4108	8.8100
01/15/2025 15:21:16.000	61.3966	8.7500
01/15/2025 15:21:46.000	61.4010	8.7500
01/15/2025 15:22:16.000	61.3922	8.6900
01/15/2025 15:22:46.000	61.3892	8.6900
01/15/2025 15:23:16.000	61.3880	8.6200
01/15/2025 15:23:46.000	61.3658	8.6200
01/15/2025 15:24:16.000	61.3449	8.5600
01/15/2025 15:24:46.000	61.3274	8.5600
01/15/2025 15:25:16.000	61.3183	8.5000
01/15/2025 15:25:46.000	61.3056	8.5000
01/15/2025 15:26:16.000	61.3064	8.5000
01/15/2025 15:26:46.000	61.2872	8.5000
01/15/2025 15:27:16.000	61.2841	8.4400
01/15/2025 15:27:46.000	61.2538	8.4400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-25_TP14/15/16/17/18/19*
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/15/2025 15:28:16.000	61.2264	8.4400
01/15/2025 15:28:46.000	61.2279	8.4400
01/15/2025 15:29:16.000	61.2265	8.4400
01/15/2025 15:29:46.000	61.2310	8.4400
01/15/2025 15:30:16.000	61.2372	8.4400
01/15/2025 15:30:46.000	61.2388	8.5000
01/15/2025 15:31:16.000	61.2380	8.5000
01/15/2025 15:31:46.000	61.2392	8.5000
01/15/2025 15:32:16.000	61.2457	8.4400
01/15/2025 15:32:46.000	61.2448	8.4400
01/15/2025 15:33:16.000	61.2386	8.4400
01/15/2025 15:33:46.000	61.2363	8.3700
01/15/2025 15:34:16.000	61.2361	8.3700
01/15/2025 15:34:46.000	61.2347	8.3100
01/15/2025 15:35:16.000	61.2242	8.2500
01/15/2025 15:35:46.000	61.2199	8.1900
01/15/2025 15:36:16.000	61.2133	8.1900
01/15/2025 15:36:46.000	61.2042	8.1200
01/15/2025 15:37:16.000	61.2021	8.0600
01/15/2025 15:37:46.000	61.1957	8.0000
01/15/2025 15:38:16.000	61.1864	7.9400
01/15/2025 15:38:46.000	61.1760	7.8700
01/15/2025 15:39:16.000	61.1619	7.8100
01/15/2025 15:39:46.000	61.1477	7.7500
01/15/2025 15:40:16.000	61.1330	7.7500
01/15/2025 15:40:46.000	61.1131	7.6900
01/15/2025 15:41:16.000	61.0930	7.6200
01/15/2025 15:41:46.000	61.0772	7.6200
01/15/2025 15:42:16.000	61.0645	7.6200
01/15/2025 15:42:46.000	61.0526	7.5600
01/15/2025 15:43:16.000	61.0368	7.5600
01/15/2025 15:43:46.000	61.0148	7.5600
01/15/2025 15:44:16.000	60.9958	7.5600
01/15/2025 15:44:46.000	60.9736	7.5600
01/15/2025 15:45:16.000	60.9568	7.5600
01/15/2025 15:45:46.000	60.9444	7.5600
01/15/2025 15:46:16.000	60.9379	7.5600
01/15/2025 15:46:46.000	60.9240	7.5600
01/15/2025 15:47:16.000	60.9182	7.5600
01/15/2025 15:47:46.000	60.9090	7.5600
01/15/2025 15:48:16.000	60.9082	7.5600
01/15/2025 15:48:46.000	60.9058	7.6200
01/15/2025 15:49:16.000	60.8918	7.6200
01/15/2025 15:49:46.000	60.8845	7.6200
01/15/2025 15:50:16.000	60.8732	7.6900
01/15/2025 15:50:46.000	60.8640	7.6900
01/15/2025 15:51:16.000	60.8523	7.7500
01/15/2025 15:51:46.000	60.8513	7.7500
01/15/2025 15:52:16.000	60.8512	7.7500

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-25_TP14/15/16/17/18/19*

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/15/2025 15:52:46.000	60.8401	7.7500
01/15/2025 15:53:16.000	60.8409	7.7500
01/15/2025 15:53:46.000	60.8567	7.7500
01/15/2025 15:54:16.000	60.8651	7.7500
01/15/2025 15:54:46.000	60.8745	7.7500
01/15/2025 15:55:16.000	60.8748	7.7500
01/15/2025 15:55:46.000	60.8808	7.7500
01/15/2025 15:56:16.000	60.8719	7.7500
01/15/2025 15:56:46.000	60.8631	7.6900
01/15/2025 15:57:16.000	60.8508	7.6900
01/15/2025 15:57:46.000	60.8315	7.6200
01/15/2025 15:58:16.000	60.8311	7.6200
01/15/2025 15:58:46.000	60.8127	7.5600
01/15/2025 15:59:16.000	60.7918	7.5600
01/15/2025 15:59:46.000	60.7742	7.5000
01/15/2025 16:00:16.000	60.7625	7.5000
01/15/2025 16:00:46.000	60.7524	7.4400
01/15/2025 16:01:16.000	60.7369	7.4400
01/15/2025 16:01:46.000	60.7237	7.4400
01/15/2025 16:02:16.000	60.7094	7.4400
01/15/2025 16:02:46.000	60.6772	7.3700
01/15/2025 16:03:16.000	44.4072	7.3700
01/15/2025 16:03:46.000	11.4544	7.3700
01/15/2025 16:04:16.000	6.6897	7.3700
01/15/2025 16:04:46.000	3.0451	7.3700
01/15/2025 16:05:16.000	0.9672	7.3700

Kalibrierschein / Calibration Certificate

gem. DIN EN ISO/IEC 17025:2018 / acc. DIN EN ISO/IEC 17025:2018

erstellt durch das Kalibrierlaboratorium
issued by the calibration laboratory

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg

DAkkS Deutsche Akkreditierungsstelle D-K-15105-01-00

Mitglied im Deutschen Kalibrierdienst
Member of the Deutscher Kalibrierdienst

Kalibrierzeichen
Calibration mark

C01107773144
D-K-15105-01-00
2024-06

Gegenstand *Object*	Elektrisches Druckmessgerät Electrical pressure gauge
Hersteller *Manufacturer*	WIKA Alexander-Wiegand-Straße 30 DE-63911 Klingenberg
Typ *Type*	CPG1500
Fabrikat/Serien-Nr. *Serial number*	1A037FOOB2N
Auftraggeber *Customer*	ROSETTI MARINO SPA Via Del Marchesato, 37 Marina di Ravenna (RA) IT 48122 Ravenna
Auftragsnummer *Order No.*	S000343115/1
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	4
Datum der Kalibrierung *Date of calibration*	18.06.2024

Dieser Kalibrierschein dokumentiert die metrologische Rückführbarkeit auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Die DAkkS ist Unterzeichner der multilateralen Übereinkommen der European co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

This calibration certificate documents the metrological traceability to national standards, which realize the units of measurement according to the International System of Units (SI).
The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.
The user is obliged to have the object recalibrated at appropriate intervals.

Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung des ausstellenden Kalibrierlaboratoriums. Kalibrierscheine ohne Unterschrift haben keine Gültigkeit.

This calibration certificate may not be reproduced other than in full except with the permission of the issuing laboratory. Calibration certificates without signature are not valid.

Datum *Date*	Stellv. Leiter des Kalibrierlaboratoriums *Ass. head of calibration laboratory*	Bearbeiter *Person in charge*
18.06.2024	Roland Schüßler	Christian Wunder

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Str. 30
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Germany

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Fax +49 9372 132-8005049
www.wika.de
CTserviceteam@wika.com

WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Kalibriergegenstand (KG)
Device under test (DUT)

Elektrisches Druckmessgerät *Electrical pressure gauge*	
Typ *Model*	CPG1500
Seriennummer *Serial number*	1A037FOOB2N
Anzeigebereich *Scale range*	(0 ... 1000) bar g
Genauigkeit *Accuracy*	0,1 % FS
Auflösung (Skalenwert) *Resolution (scale division)*	0,1 bar
Messstellen-Nr. *Tag number*	

Kalibrierverfahren
Calibration procedure

Die Kalibrierung erfolgte nach der Richtlinie DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) Ablauf B, durch direkten Vergleich der Messwerte des Kalibriergegenstandes mit denen des Bezugs- oder Gebrauchsnormales. Der Kalibrierschein wurde mit WIKA-Cal Version 2.11.0.213 erstellt.
Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard. The calibration certificate has been created with WIKA-Cal version 2.11.0.213.

Ort der Kalibrierung
Place of calibration

Klingenberg Kalibrierlabor 2 *Klingenberg calibration laboratory 2*	g = (9,8100531 ± 0,00002) m/s²

Messbedingungen
Measurement conditions

Gebrauchsnormal (GN) Druckcontroller *Working standard (WS) Pressure controller*	
Typ *Model*	CPC8000
Kalibrierzeichen *Calibration mark*	07072415
Anzeigebereich *Scale range*	(0 ... 1000) bar g
Genauigkeit *Accuracy*	0,01 % FS

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CTserviceteam@wika.com

WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Aufbau *Assembly*	
Druckübertragungsmedium *Pressure transmission medium*	Wasser *water*
Bezugsebene (für Referenzwert) *Reference height (for reference value)*	Dichtfläche KG *Sealing face DUT*
Lage bei der Kalibrierung *Position during calibration*	senkrecht *vertical*

Umgebungsbedingungen
Ambient conditions

Temperatur *Temperature*	(23,6 ± 0,5) °C
Atmosphärischer Luftdruck *Atmospheric pressure*	(997,7 ± 0,1) hPa
rel. Luftfeuchte *rel. humidity*	(40 ± 5) %

Messergebnisse
Measurement results

Referenzwert GN *Reference value WS* bar	Ablesung KG *Reading DUT* bar		
	↑	↓	↑
0,00	0,0	0,0	0,0
125,00	125,0	125,1	125,0
250,00	250,1	250,1	250,1
375,00	375,0	375,2	375,0
500,00	500,1	500,1	500,0
625,00	625,0	625,0	625,0
750,00	749,9	750,0	749,9
875,00	874,9	874,8	874,9
1000,00	999,9	999,9	999,9

Messunsicherheit
Measurement uncertainty

Referenzwert GN *Reference value WS* bar	Mittelwert *Mean value* bar	Messabweichung *Deviation* bar	Wiederholbarkeit *Repeatability* bar	Hysterese *Hysteresis* bar	Messunsicherheit *Meas. uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
125,00	125,1	0,1	0,0	0,1	0,40
250,00	250,1	0,1	0,0	0,0	0,40
375,00	375,1	0,1	0,0	0,2	0,40
500,00	500,1	0,1	0,1	0,0	0,40
625,00	625,0	0,0	0,0	0,0	0,40
750,00	750,0	0,0	0,0	0,1	0,40
875,00	874,9	-0,1	0,0	0,1	0,40
1000,00	999,9	-0,1	0,0	0,0	0,40

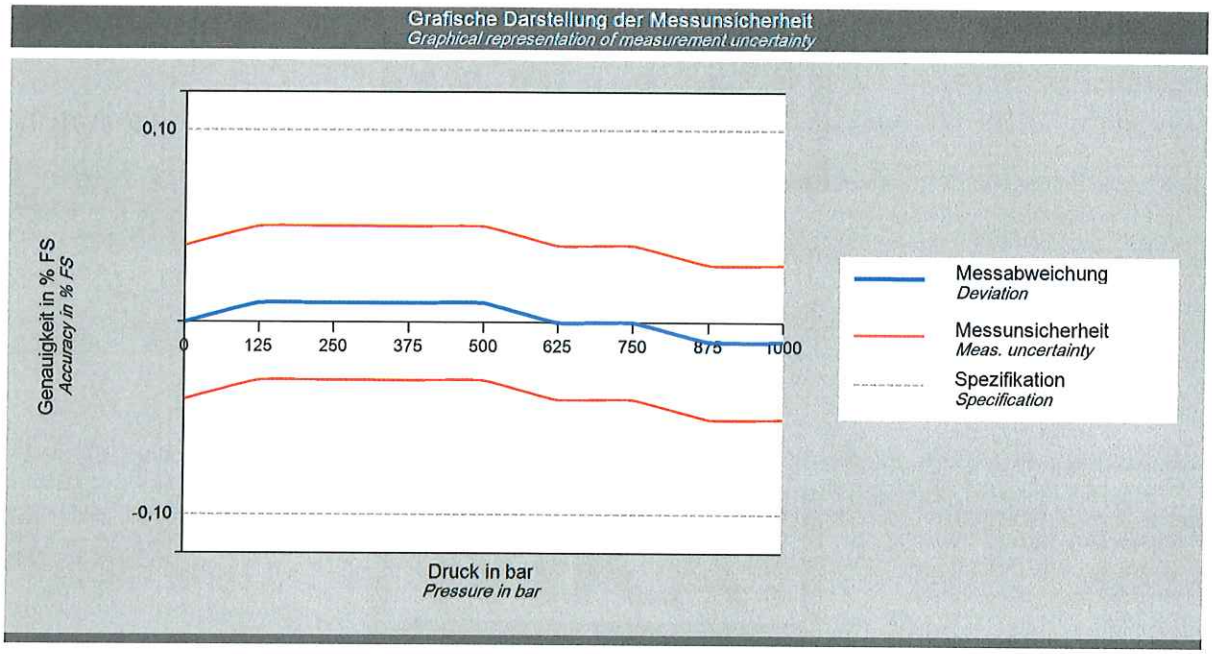
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Angegeben ist die erweiterte Messunsicherheit, die sich aus der Standardmessunsicherheit durch Multiplikation mit dem Erweiterungsfaktor k = 2 ergibt. Sie wurde gemäß EA-4/02 M ermittelt. Der Wert der Messgröße liegt mit einer Wahrscheinlichkeit von etwa 95 % im zugeordneten Werteintervall.
The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k = 2. It has been determined in accordance with EA-4/02 M. The value of the measurand lies within the assigned range of values with a probability of approx. 95 %.



Die Genauigkeit des KG beträgt 0,50 bar
The accuracy of the DUT is 0.50 bar

Konformitätsaussage
Statement of compliance

Der Kalibriergegenstand hält die geforderte Spezifikation ein!
The calibration item keeps the required specification!

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Base Load Power Hub (BLPH)

TEST PACK

N°25-05-TP-018
SUB-SYSTEM N° 25-05

System	25
Sub-System	25-05
Test Pressure	60 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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1. COLOURED MARKED P&IDs

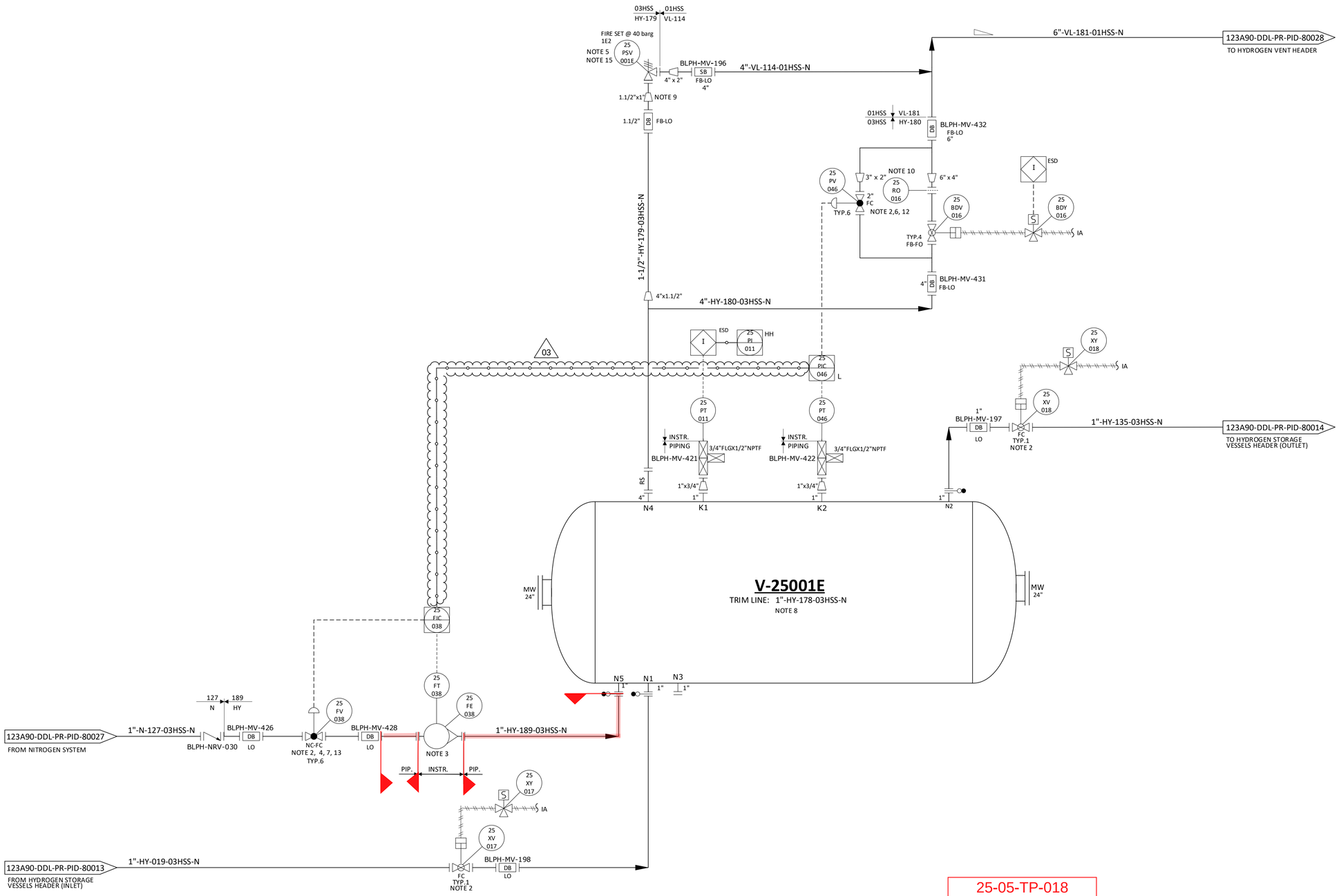
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



25-05-TP-018
60.00 barg

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

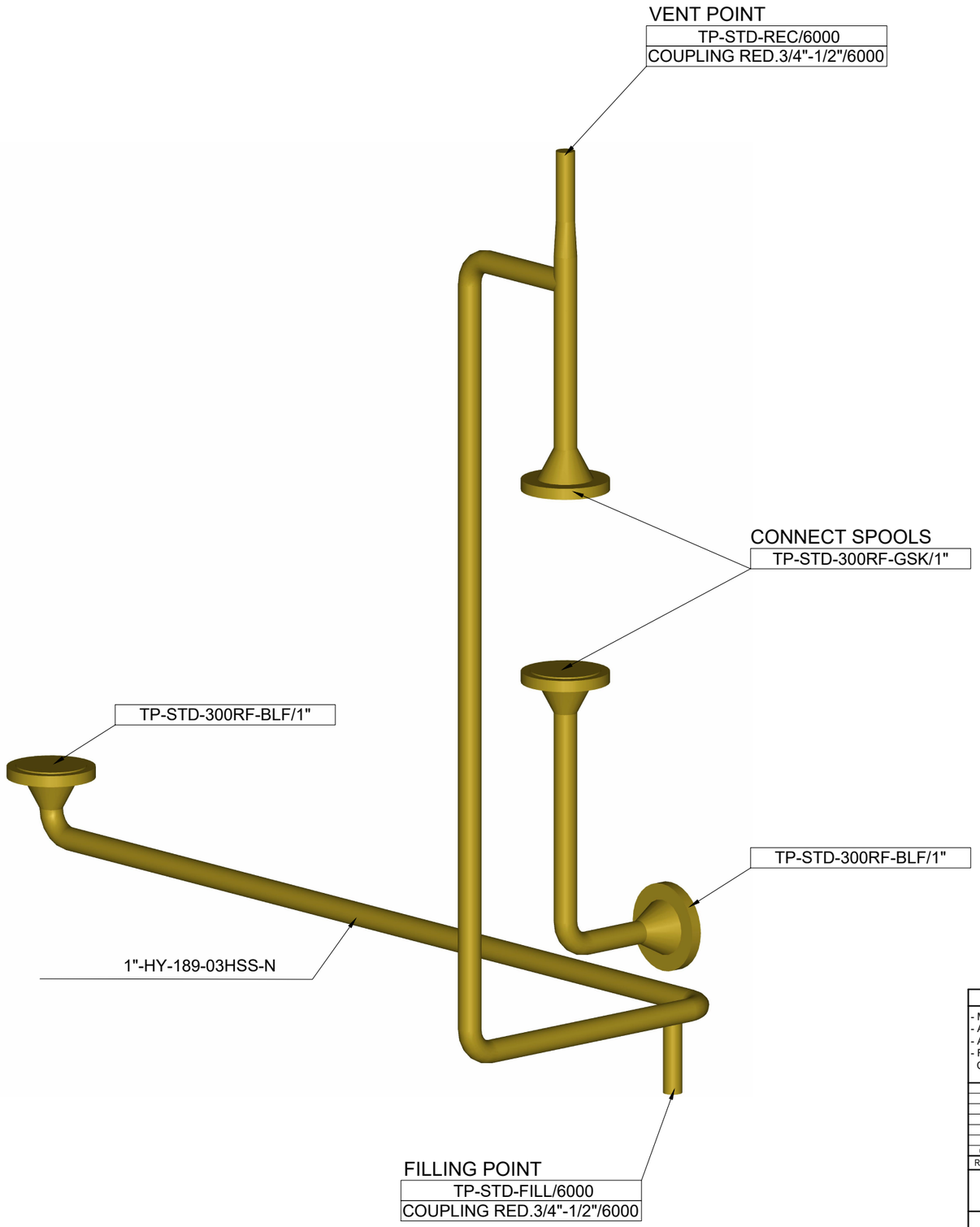
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80019	SHEET 001	REV. 03

File Name = FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



25-05-TP-018

60 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
25-05-TP-018

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

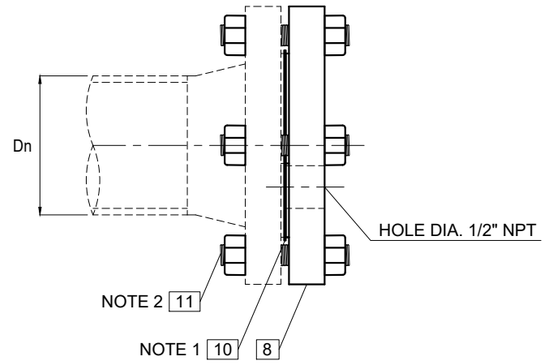
CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-018	/	CPLRSS00233Q0H	Coupling Reducing ASME B16.11 THRD-F NPT 6000# FRG ASTM A182 Gr.F316/316L	-	-	2	
TP-018	TP-STD-300RF-BLF/1"	FLBHCS0018010H	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1	2	2	
TP-018	TP-STD-300RF-BLF/1"	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ø1" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-018	TP-STD-300RF-BLF/1"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	
TP-018	TP-STD-300RF-GSK/1"	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ø1" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-018	TP-STD-300RF-GSK/1"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	

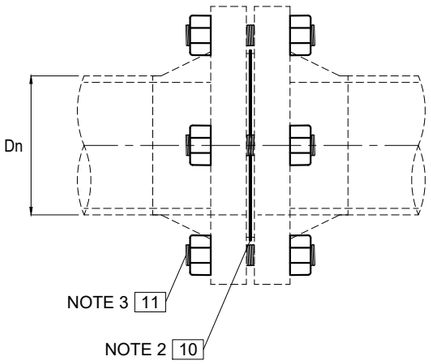
TP-STD-300RF | 300 RF | STANDARD FOR BLIND POINT

TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

MATERIAL LIST			
STD	**POS.**	**DESCRIPTION**	**Q.TY**
TP-STD-300RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-300RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=75 MM	4
TP-STD-300RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=80 MM	4
TP-STD-300RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-300RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=95 MM	4
TP-STD-300RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-300RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-300RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-300RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=115 MM	8
TP-STD-300RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=125 MM	12
TP-STD-300RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=145 MM	12
TP-STD-300RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=160 MM	16
TP-STD-300RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=175 MM	16
TP-STD-300RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=180 MM	20
TP-STD-300RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=195 MM	20
TP-STD-300RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=200 MM	24
TP-STD-300RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=210 MM	24
TP-STD-300RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/2" L=235 MM	24



TP-STD-300RF-BLF/Dn
BLIND FLANGE



TP-STD-300RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

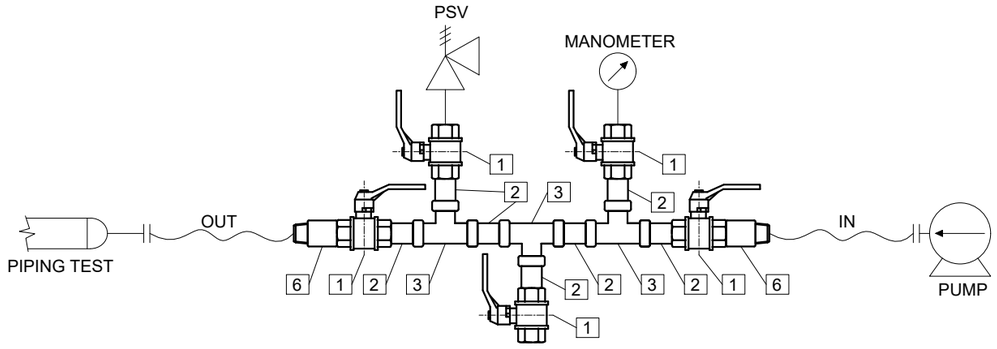
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-300RF
TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_300RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

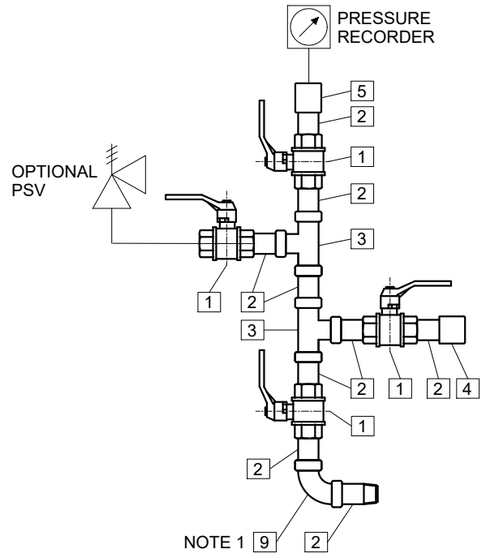
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
93	HY-189	189	1	03HSS	N	3,38	40S	N/A	1"-HY-189-03HSS-N	123A90-DDL-PR-PID-80019	40,00	25 / 64	25-05 / 64-10	TP-018/TP-020	Water	60.00	Hydrogen	Stainless Steel	INF	II	6A	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

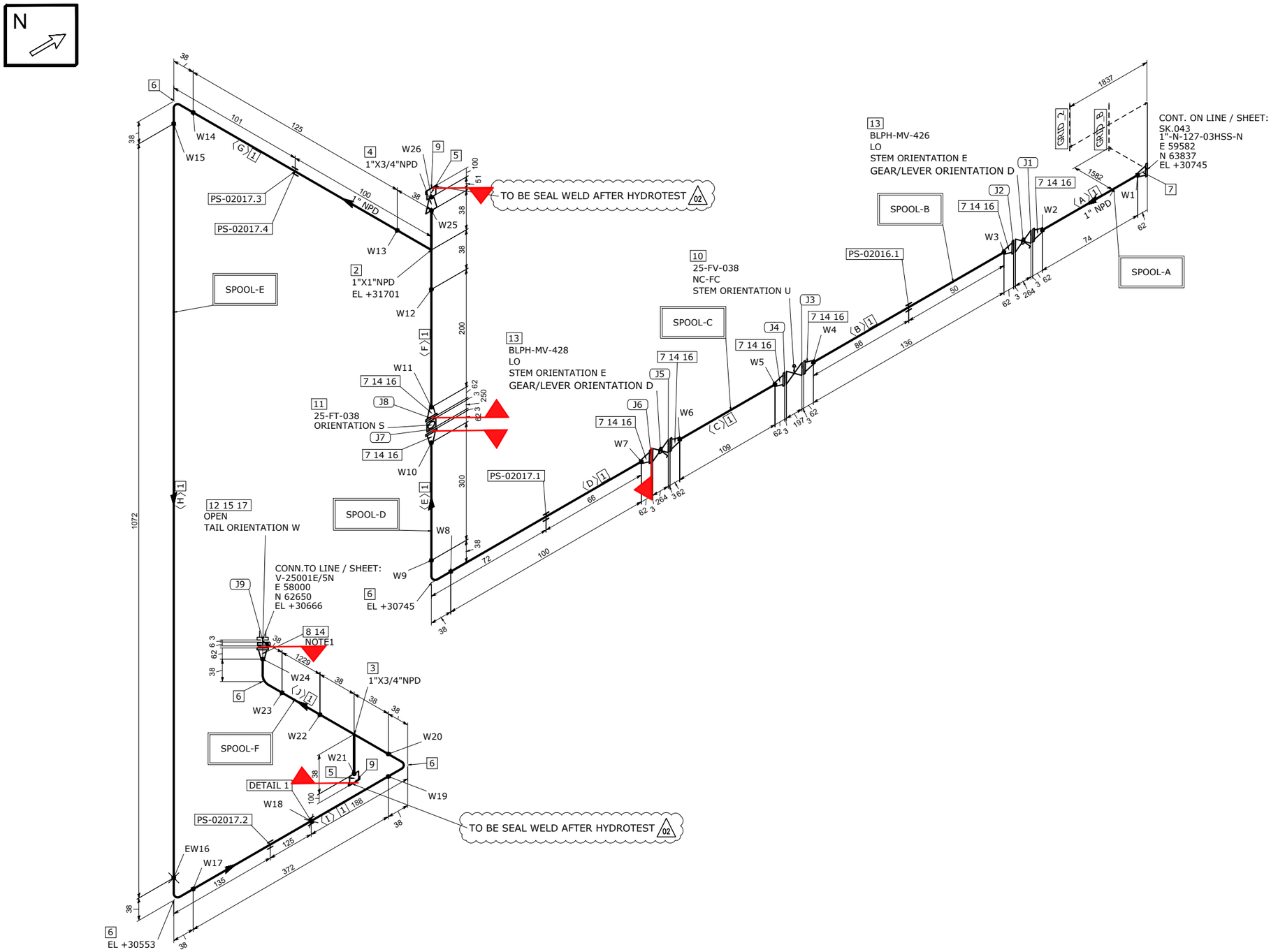
REV. **05**

TITLE

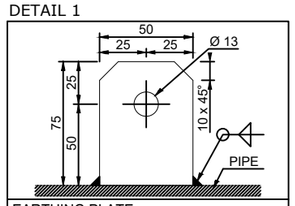
SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
124	123A90-FDL-PP-DI-00093-01	**093**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-HY-189-03HSS-N	30/07/2024	03/09/2024	17/09/2024											**02**	**05**		**TP-018/TP-020**



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.7M	9.4
2	1X1	TEE0SS00550100	Tee ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
4	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
5	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	2	0.3
6	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
7	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	9	16.5
8	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
9	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	2	0.4
10	1		Control Valve - FLG 300 #RF	1	40.0
11	1		Flow Transmitter - ANSI - FLG 300#	1	12.0
12	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
13	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	2	27.0
14	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	9	0.6
15	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
16	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	32	7.4
17	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	29.4
ERECTION WEIGHT [kg]	89.0
OVERALL WEIGHT [kg]	118.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW
EW16	1	BW
W17	1	BW
W18		FW
W19	1	BW
W20	1	BW
W21	3/4	BW
W22	1	BW
W23	1	BW
W24	1	BW
W25	1	BW
W26	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	74	BEVEL	BEVEL
B	1	136	BEVEL	BEVEL
C	1	109	BEVEL	BEVEL
D	1	100	BEVEL	BEVEL
E	1	300	BEVEL	BEVEL
F	1	200	BEVEL	BEVEL
G	1	125	BEVEL	BEVEL
H	1	1072	BEVEL	BEVEL
I	1	372	BEVEL	BEVEL
J	1	1229	BEVEL	BEVEL

SUPPORT LIST

PS-02016.1
PS-02017.1
PS-02017.3
PS-02017.4
PS-02017.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	3.8
B	2	4.0
C	2	3.9
D	4	4.8
E	6.75	6.1
F	6.75	6.8
MONT	1	89.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-189-03HSS-N
SK.093

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00093
SHEET / OF: 1/1
REV.: 02

25-05-TP-018

MASTER

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

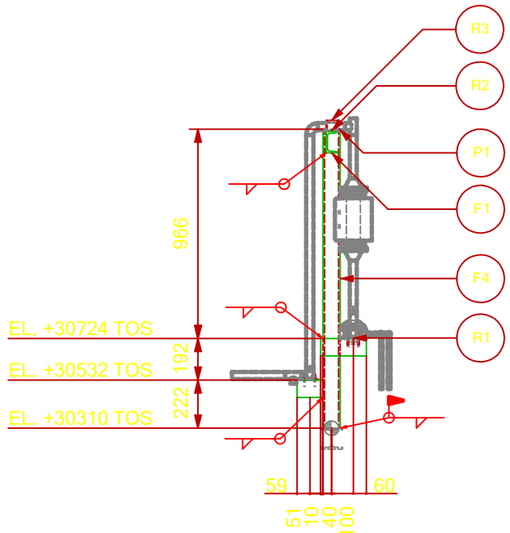
NOTES

1.JACKSCREWS POSITION N/S

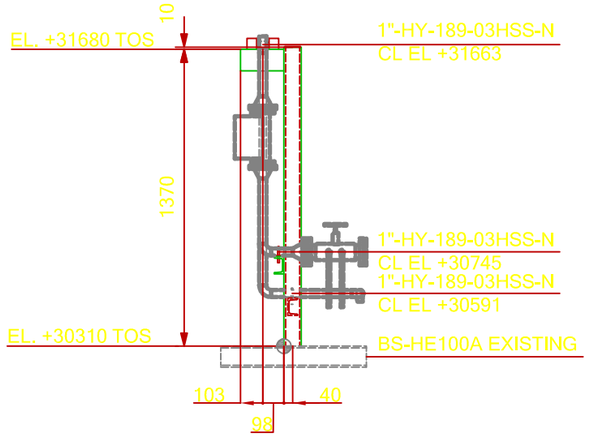
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

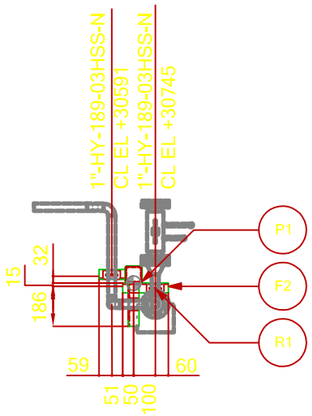
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-02017	B1	PIP	UPPER DECK		1"-HY-189-03HSS-N	S-211 - 1"		1	0,286	0,000	00	19/08/2024	IFR		TP-018
PS-02017	B2	PIP	UPPER DECK		1"-HY-189-03HSS-N	S-211 - 1"		1	0,286	0,000	00	19/08/2024	IFR		TP-018
PS-02017	B3	PIP	UPPER DECK		1"-HY-189-03HSS-N	C-16 - 30 - 30 - 5		1	0,010	0,000	00	19/08/2024	IFR		TP-018
PS-02017	B4	PIP	UPPER DECK		1"-HY-189-03HSS-N	S-203 - A - 1" - 2		1	0,411	0,019	00	19/08/2024	IFR		TP-018



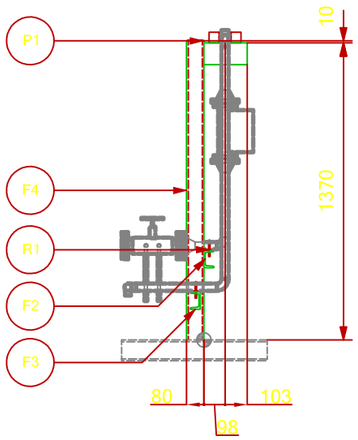
VIEW LOOKING NORTH



VIEW LOOKING WEST



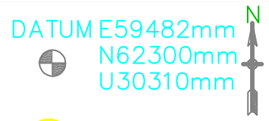
PLAN VIEW

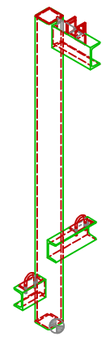


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-1"	-	-	2	-	0,29	-
R2	STD	C-16-30-30-5	-	-	1	-	0,01	-
R3	STD	S-203-A-1"-2	-	-	1	-	0,41	0,019
F1	BEAM	UPN100	Carbon Steel	200	1	10,57	2,11	0,077
F2	BEAM	UPN80	Carbon Steel	210	1	8,66	1,82	0,068
F3	BEAM	UPN80	Carbon Steel	120	1	8,66	1,04	0,040
F4	BEAM	SHS80x80x8	Carbon Steel	1380	1	17,15	23,67	0,760
P1	PLATE	3	Carbon Steel	72x72	1	-	0,12	0,005
						TOTAL	29,8	0,97





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-02017

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1 / REV. 00

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

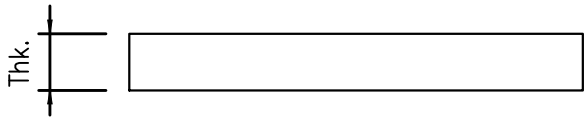
Revision: 0

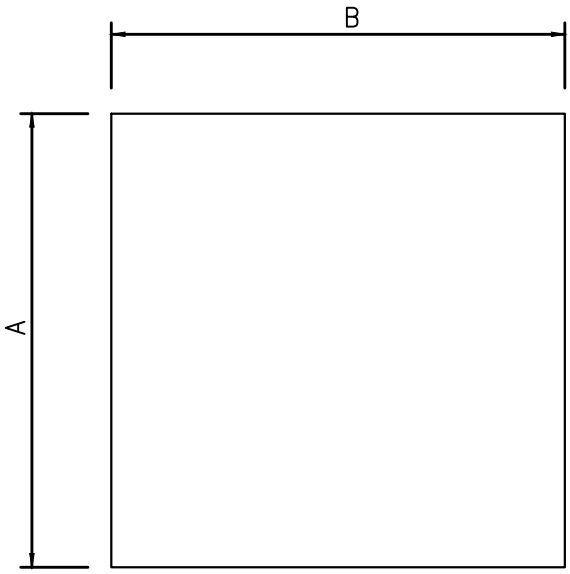
Date: –

PIATTO DI ISOLAMENTO IN PTFE Sp=VARIABILE
PTFE ISOLATING PAD Thk=VARIABLE

C–16

Example of designation : STD – A – B – Thk.
(C–16 – 70 – 100 – 5)





NOTES:
1– MATERIAL: PTFE
2– STRENGHT FOR COMPRESSION (1% DI DEFORMATION) = 5 N/mm² x Thk. (mm)
3– THE PTFE PAD SHALL BE COVERED ALSO AFTER THE POSSIBLE DISPLACEMENTS OF THE PIPING LINE

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

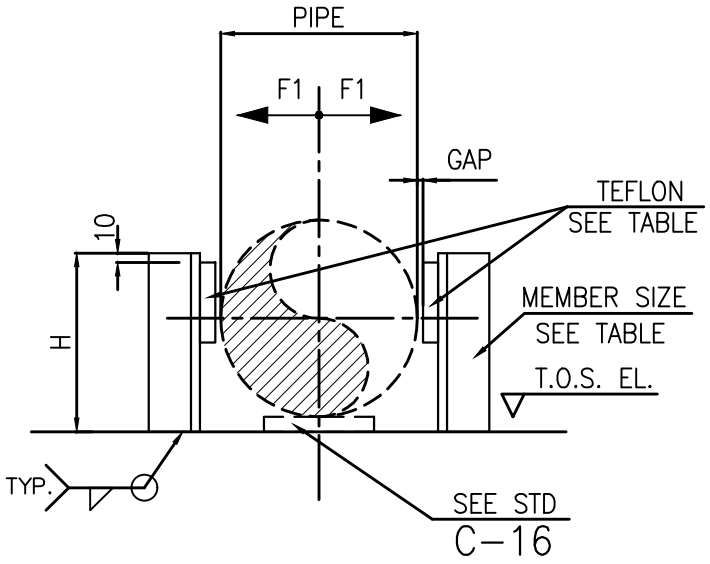
Revision: 0

Date: –

GUIDA PER TUBAZIONI NON ISOLATE
GUIDE FOR UNINSULATED PIPES

S–203

Example of designation : STD – TYPE – PIPE ND" – GAP
(S–203 – A – 10" – 2)



½" TO 16"

PIPE MATERIAL	
TYPE	DESCRIPTION
A	OTHERS
B	Cu–Ni

PIPE			H	TEFLON SIZE (2 PIECES)	MEMBER SIZE	MAX LOAD (kN)
ND"	TYPE A	TYPE B				F1
½"	21	16	50	40x40x5	L50x5	10
3/4"	27	25	50	40x40x5	L50x5	
1"	33	30	50	40x40x5	L50x5	
1½"	48	44.5	60	40x40x5	L50x5	
2"	60.3	57	60	50x40x5	L60x6	
3"	88.9	88.9	100	50x50x5	L60x6	
4"	114.3	108	110	70x50x5	L80x8	
6"	168.3	159	140	70x60x5	L80x8	
8"	219.1	219.1	160	70x60x5	L80x8	
10"	273	267	190	90x60x5	L100x10	
12"	323.9	323.9	210	90x60x5	L100x10	
14"	355.9	368	230	90x60x5	L100x10	
16"	406.4	419	250	90x60x5	L100x10	

NOTES:

1– MATERIAL TO BE CARBON STEEL.

2– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0.8 OF THE MINIMUM THICKNESS TO BE WELDED EXCEPT WHERE OTHERWISE INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

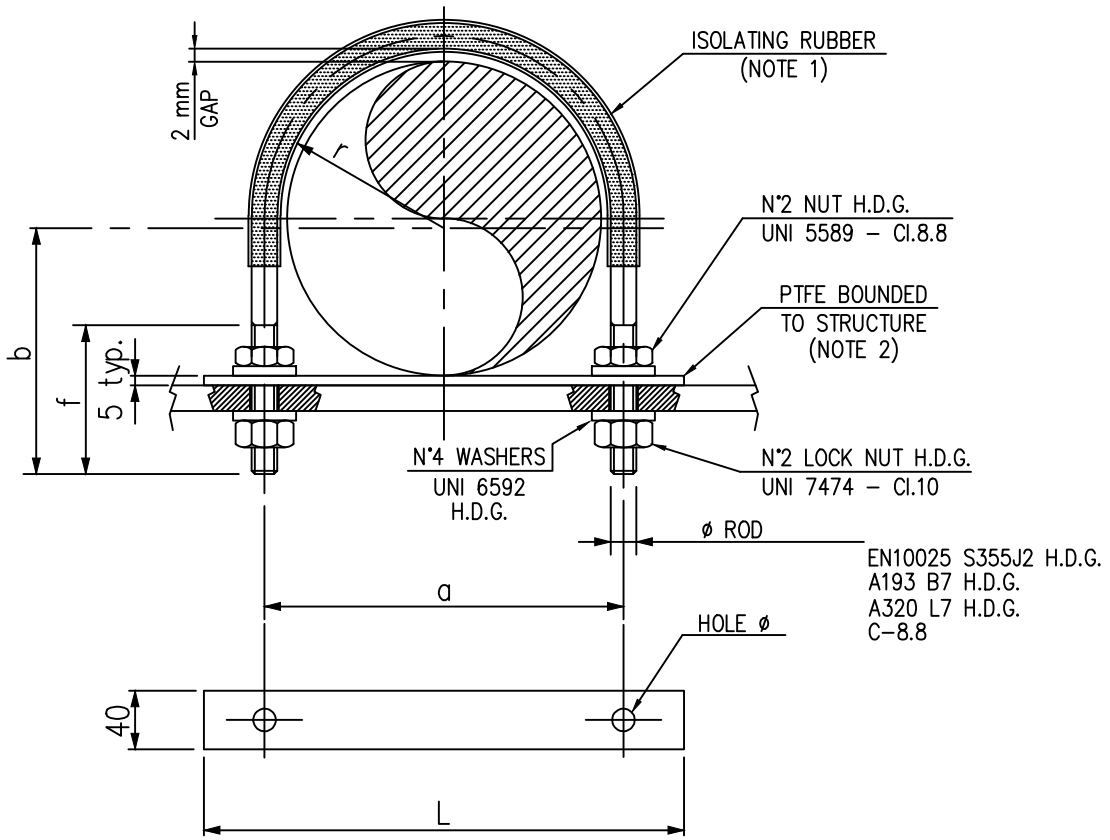
Revision: 0

Date: –

CAVALLOTTI GALVANIZZATI DI GUIDA PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS GUIDE FOR C.S. S.S. AND ALLOY PIPES (NON GRIP)

S–211

Example of designation : STD – PIPE ND"
(S–211 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1
2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	93	**To**	93
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/93/1/_		**02**	**30-10-2024**	**59**	**AZ39**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**A**
03HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000937	4	Acceptable				10-11-2024				
2/93/1/_		**02**	**30-10-2024**	**59**	**AZ39**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000938	4	Acceptable				10-11-2024				
3/93/1/_		**02**	**30-10-2024**	**59**	**AZ39**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-11-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000878	4	Acceptable				09-11-2024				
4/93/1/_		**02**	**28-10-2024**	**59**	**AZ39**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				30-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000736	4	Acceptable				30-10-2024				
5/93/1/_		**02**	**30-10-2024**	**59**	**AZ39**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000879	4	Acceptable				09-11-2024				
6/93/1/_		**02**	**30-10-2024**	**59**	**AZ39**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**09-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000880	4	Acceptable				09-11-2024				
7/93/1/_		**02**	**30-10-2024**	**59**	**AZ36**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000939	4	Acceptable				10-11-2024				
8/93/1/_		**02**	**30-10-2024**	**59**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000940	4	Acceptable				10-11-2024				
9/93/1/_		**02**	**30-10-2024**	**59**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000941	4	Acceptable				10-11-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
9/93/1/_		**02**	**30-10-2024**	**59**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**D**
10/93/1/_		**02**	**30-10-2024**	**59**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				04-11-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000942	4		Acceptable				10-11-2024				
11/93/1/_		**02**	**28-10-2024**	**56**	**AZ36**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				29-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000722	4		Acceptable				30-10-2024				
12/93/1/_		**02**	**28-10-2024**	**56**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				29-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000723	4		Acceptable				30-10-2024				
13/93/1/_		**02**	**25-10-2024**	**54**	**AZ36**			**TEE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				29-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000724	4		Acceptable				30-10-2024				
14/93/1/_		**02**	**25-10-2024**	**54**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				29-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000725	4		Acceptable				30-10-2024				
15/93/1/_		**02**	**29-10-2024**	**58**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				30-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	000943	4		Acceptable				10-11-2024				
16/93/1/_		**02**	**10-12-2024**	**74**	**AX416**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**12-12-2024**	
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK			Acceptable				11-12-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	AA	100 %	001058	4		Acceptable				12-12-2024				
17/93/1/_		**02**	**24-10-2024**	**53**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**29-10-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				25-10-2024				
		RT	FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000647	4		Acceptable				29-10-2024				
18/93/1/_		**02**	**24-10-2024**	**53**	**AZ36**			**PL**	**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**05-11-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				25-10-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
18/93/1/_		**02**	**24-10-2024**	**53**	**AZ36**			**PL**	**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**05-11-2024**	**F**
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000030		Acceptable				05-11-2024				
19/93/1/_		**02**	**24-10-2024**	**53**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**29-10-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				25-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000648	4	Acceptable				29-10-2024				
20/93/1/_		**02**	**04-11-2024**	**62**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				05-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000944	4	Acceptable				10-11-2024				
21/93/1/_		**02**	**24-10-2024**	**53**	**AZ36**			**TEE**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**29-10-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				25-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000639	4	Acceptable				29-10-2024				
22/93/1/_		**02**	**04-11-2024**	**62-78**	**AZ36**			**TEE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**15-11-2024**	**F**
					AZ39	**After Cutting**													
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				05-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000973	4	Cut				10-11-2024				
Cut 14-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	C1A		GTAW	15-11-2024				
		RT	C 1 DTA	After Cutting		IDL-QCI-RT 0036 00	PR	100 %	000999	4	Acceptable				15-11-2024				
23/93/1/_		**02**	**04-11-2024**	**62**	**AZ36**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**10-11-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				05-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000945	4	Acceptable				10-11-2024				
24/93/1/_		**02**	**25-10-2024**	**54**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**04-11-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				29-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000816	4	Acceptable				04-11-2024				
25/93/1/_		**02**	**25-10-2024**	**54**	**AZ36**			**TEE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				29-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000726	4	Acceptable				30-10-2024				
26/93/1/_		**02**	**25-10-2024**	**54**	**AZ36**			**RED**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				29-10-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Cons	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
26/93/1/_		**02**	**25-10-2024**	**54**	**AZ36**		**RED**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-10-2024**	**E**
	RT		FIN	Weld Completion	IDL-QCI-RT 0036 00	PR	100 %	000727	4	Acceptable					30-10-2024			

Totals per DWG	**93**	**Prefabrication**	**2,41 m**	**25 Nr. Welds**	**23,50 inch**
		Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,51 m**	**26 Nr. Welds**	**24,50 inch**
		Accepted	**2,51 m**	**26 Nr. Welds**	**24,50 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**2,41 m**	**25 Nr. Welds**	**23,50 inch**
		Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,51 m**	**26 Nr. Welds**	**24,50 inch**
		Accepted	**2,51 m**	**26 Nr. Welds**	**24,50 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**2,41 m**	**25 Nr. Welds**	**23,50 inch**
		Erection	**0,10 m**	**1 Nr. Welds**	**1,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**2,51 m**	**26 Nr. Welds**	**24,50 inch**
		Accepted	**2,51 m**	**26 Nr. Welds**	**24,50 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 15/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
93	02	1	D	03HSS	6	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	1519623	1724000839	00270	1519623	W8-W9	
93	02	1	D	03HSS	7	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DL364	1724000839	01010	12/230044598/27/REV-00	W7	
93	02	1	D	03HSS	7	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DL364	1724000839	01010	12/230044598/27/REV-00	W10	
93	02	1	D	03HSS	1D	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
93	02	1	D	03HSS	1E	0,3	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
93	02	1	E	03HSS	2	1	Tee BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	66A-SWJ011	1724000839	00480	T202318000110	W12-W13-W25	
93	02	1	E	03HSS	4	1	Reducer Concentric BW ›1"x3/4" Thk.3.38mmx2.87mm ASTM A403 Gr.WP316/316L	MR230609	1724000839	00350	MCP2401-00015-16	W25-W26	
93	02	1	E	03HSS	5	1	Nipple L=100mm TOE ›3/4" Thk.2,87mm ASTM A312 Gr.TP316/316L	SZ8	1724001267	00260	002978	W26	
93	02	1	E	03HSS	6	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	1519623	1724000839	00270	1519623	W14-W15	
93	02	1	E	03HSS	7	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DL364	1724000839	01010	12/230044598/27/REV-00	W11	
93	02	1	E	03HSS	1F	0,2	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
93	02	1	E	03HSS	1G	0,125	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
93	02	1	E	03HSS	1H	1,072	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
93	02	1	F	03HSS	3	1	Tee Reducing BW ›1"x3/4" Thk.3.38mmx2.87mm ASTM A403 Gr.WP316/316L	1067621	1724000839	00560	1067621	W20-W21-W22	
93	02	1	F	03HSS	5	1	Nipple L=100mm TOE ›3/4" Thk.2,87mm ASTM A312 Gr.TP316/316L	SZ8	1724001267	00260	002978	W21	
93	02	1	F	03HSS	6	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	1519623	1724000839	00270	1519623	W17	
93	02	1	F	03HSS	6	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	1519623	1724000839	00270	1519623	W19-W20	
93	02	1	F	03HSS	6	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	1519623	1724000839	00270	1519623	W23-W24	
93	02	1	F	03HSS	8	1	Flange WN For Jackscrews ›1" Thk.3,38mm 300LB RF ASTM A182 Gr.F316/316L	S-27133	1724001267	00160	IND.21.6268/QM/U	W24	
93	02	1	F	03HSS	1I	0,372	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
93	02	1	F	03HSS	MESSA A TERRA	1	MESSA A TERRA PL75 x 50 x 5 thk. FORO Ø13	43076	1724000275	00010	929116/002	W18	
93	02	1	F	03HSS	1J	1,229	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	25-05-TP-018	: Test Pack 25-05-TP-018			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003372		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	rodeo	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-16	2025-01-16	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-16T13:01:42.877Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-16T15:39:39.964Z	

ITEM	Tag	25-05-TP-036	: Test Pack 25-05-TP-036		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003505	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	CLX02A	Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	NA
4	Check that pipework at pump and vessel nozzles are free from spring.	PL
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	NA
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	NA
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check performed on spool not assembled in erection.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-04	2025-01-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-04T06:00:10.037Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-07T17:17:45.312Z	

ITEM	Tag	25-05-TP-036	: Test Pack 25-05-TP-036			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003506		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	NA
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	OK
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	Note
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	OK
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 13. Checked, there were no opened joints.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-06	2025-02-12	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-06T15:31:34.682Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-12T17:16:09.826Z	

ITEM	Tag	25-05-TP-036	: Test Pack 25-05-TP-036			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003507		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	PL
3	Check that the fluid direction is correct.	PL
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	OK
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Lorenzo Novaga	
Date	2025-02-11	2025-03-06	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-11T07:37:21.493Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-06T15:40:33.584Z	

ITEM	Tag	25-05-TP-036	: Test Pack 25-05-TP-036		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003508	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	NA	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	07/01/2025	Start time	11:45	End time	11:50
Flow rate	NA	Duration	5 min	Medium T°	NA

Operation Description	Maintained a high flow rate to help dislodging and carry away debrises. Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.
Safety Precautions	Restricting access to the area.
Result and comments	Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-04	2025-01-07	
Signature	Digitaly signed by Emanuele Delfino 2025-01-04T06:00:22.918Z	Digitaly signed by Lorenzo Novaga 2025-01-07T17:25:23.454Z	

ITEM	Tag	25-05-TP-036	: Test Pack 25-05-TP-036		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003509	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	40 barg	Max test pressure	60 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-04	2025-01-08	
Signature	Digitaly signed by Emanuele Delfino 2025-01-04T06:00:36.316Z	Digitaly signed by Lorenzo Novaga 2025-01-08T10:05:23.988Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-25-TP32/33/34/35/36

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FON32E
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:C5:19:D5)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	30000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	01:04:46
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:27:03 pm

Logger protocol

Protocollo di acquisizione elenco dati

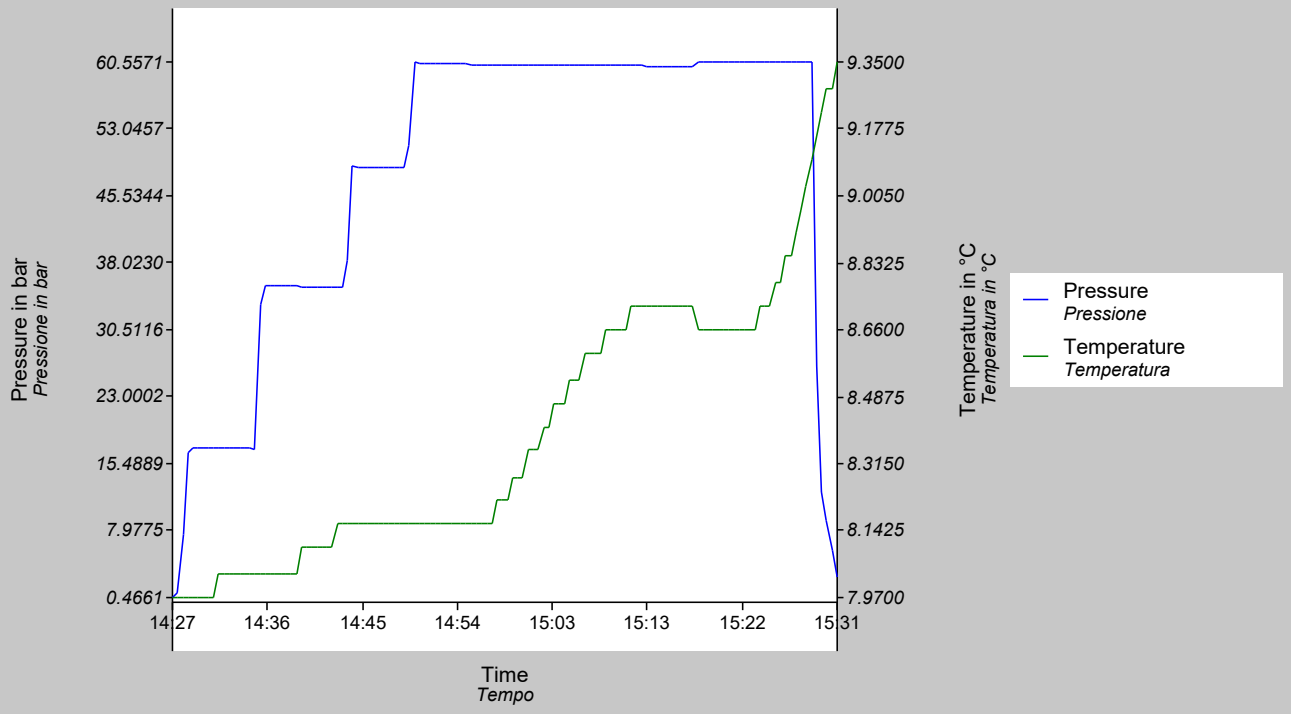
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-25-TP32/33/34/35/36

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/07/2025 14:27:03.000	0.4661	7.9700
01/07/2025 14:27:33.000	0.9380	7.9700
01/07/2025 14:28:03.000	7.5088	7.9700
01/07/2025 14:28:33.000	16.8068	7.9700
01/07/2025 14:29:03.000	17.3092	7.9700
01/07/2025 14:29:33.000	17.2907	7.9700
01/07/2025 14:30:03.000	17.2810	7.9700
01/07/2025 14:30:33.000	17.2733	7.9700
01/07/2025 14:31:03.000	17.2680	7.9700
01/07/2025 14:31:33.000	17.2611	8.0300
01/07/2025 14:32:03.000	17.2579	8.0300
01/07/2025 14:32:33.000	17.2525	8.0300
01/07/2025 14:33:03.000	17.2456	8.0300
01/07/2025 14:33:33.000	17.2454	8.0300
01/07/2025 14:34:03.000	17.2385	8.0300
01/07/2025 14:34:33.000	17.2391	8.0300
01/07/2025 14:35:03.000	17.0955	8.0300

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-25-TP32/33/34/35/36

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/07/2025 14:35:33.000	33.2759	8.0300
01/07/2025 14:36:03.000	35.4593	8.0300
01/07/2025 14:36:33.000	35.4354	8.0300
01/07/2025 14:37:03.000	35.4187	8.0300
01/07/2025 14:37:33.000	35.4046	8.0300
01/07/2025 14:38:03.000	35.3938	8.0300
01/07/2025 14:38:33.000	35.3823	8.0300
01/07/2025 14:39:03.000	35.3732	8.0300
01/07/2025 14:39:33.000	35.3647	8.1000
01/07/2025 14:40:03.000	35.3579	8.1000
01/07/2025 14:40:33.000	35.3505	8.1000
01/07/2025 14:41:03.000	35.3435	8.1000
01/07/2025 14:41:33.000	35.3321	8.1000
01/07/2025 14:42:03.000	35.3238	8.1000
01/07/2025 14:42:33.000	35.3168	8.1000
01/07/2025 14:43:03.000	35.3089	8.1600
01/07/2025 14:43:33.000	35.2993	8.1600
01/07/2025 14:44:03.000	38.3557	8.1600
01/07/2025 14:44:33.000	48.8048	8.1600
01/07/2025 14:45:03.000	48.7745	8.1600
01/07/2025 14:45:33.000	48.7573	8.1600
01/07/2025 14:46:03.000	48.7432	8.1600
01/07/2025 14:46:33.000	48.7306	8.1600
01/07/2025 14:47:03.000	48.7192	8.1600
01/07/2025 14:47:33.000	48.7075	8.1600
01/07/2025 14:48:03.000	48.6893	8.1600
01/07/2025 14:48:33.000	48.6726	8.1600
01/07/2025 14:49:03.000	48.6526	8.1600
01/07/2025 14:49:33.000	48.6286	8.1600
01/07/2025 14:50:03.000	51.2534	8.1600
01/07/2025 14:50:33.000	60.4900	8.1600
01/07/2025 14:51:03.000	60.4452	8.1600
01/07/2025 14:51:33.000	60.4270	8.1600
01/07/2025 14:52:03.000	60.4027	8.1600
01/07/2025 14:52:33.000	60.3829	8.1600
01/07/2025 14:53:03.000	60.3652	8.1600
01/07/2025 14:53:33.000	60.3508	8.1600
01/07/2025 14:54:03.000	60.3290	8.1600
01/07/2025 14:54:33.000	60.3202	8.1600
01/07/2025 14:55:03.000	60.3029	8.1600
01/07/2025 14:55:33.000	60.2963	8.1600
01/07/2025 14:56:03.000	60.2829	8.1600
01/07/2025 14:56:33.000	60.2699	8.1600
01/07/2025 14:57:03.000	60.2596	8.1600
01/07/2025 14:57:33.000	60.2484	8.1600
01/07/2025 14:58:03.000	60.2395	8.1600
01/07/2025 14:58:33.000	60.2360	8.2200
01/07/2025 14:59:03.000	60.2296	8.2200
01/07/2025 14:59:33.000	60.2220	8.2200

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-25-TP32/33/34/35/36

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/07/2025 15:00:03.000	60.2170	8.2800
01/07/2025 15:00:33.000	60.2136	8.2800
01/07/2025 15:01:03.000	60.2099	8.2800
01/07/2025 15:01:33.000	60.2069	8.3500
01/07/2025 15:02:03.000	60.2055	8.3500
01/07/2025 15:02:33.000	60.1993	8.3500
01/07/2025 15:03:03.000	60.1914	8.4100
01/07/2025 15:03:33.000	60.1933	8.4100
01/07/2025 15:04:03.000	60.1901	8.4700
01/07/2025 15:04:33.000	60.1882	8.4700
01/07/2025 15:05:03.000	60.1862	8.4700
01/07/2025 15:05:33.000	60.1823	8.5300
01/07/2025 15:06:03.000	60.1801	8.5300
01/07/2025 15:06:33.000	60.1701	8.5300
01/07/2025 15:07:03.000	60.1656	8.6000
01/07/2025 15:07:33.000	60.1662	8.6000
01/07/2025 15:08:03.000	60.1614	8.6000
01/07/2025 15:08:33.000	60.1538	8.6000
01/07/2025 15:09:03.000	60.1465	8.6600
01/07/2025 15:09:33.000	60.1406	8.6600
01/07/2025 15:10:03.000	60.1364	8.6600
01/07/2025 15:10:33.000	60.1329	8.6600
01/07/2025 15:11:03.000	60.1234	8.6600
01/07/2025 15:11:33.000	60.1216	8.7200
01/07/2025 15:12:03.000	60.1221	8.7200
01/07/2025 15:12:33.000	60.1158	8.7200
01/07/2025 15:13:03.000	60.1098	8.7200
01/07/2025 15:13:33.000	60.1068	8.7200
01/07/2025 15:14:03.000	60.0960	8.7200
01/07/2025 15:14:33.000	60.0928	8.7200
01/07/2025 15:15:03.000	60.0875	8.7200
01/07/2025 15:15:33.000	60.0775	8.7200
01/07/2025 15:16:03.000	60.0725	8.7200
01/07/2025 15:16:33.000	60.0649	8.7200
01/07/2025 15:17:03.000	60.0565	8.7200
01/07/2025 15:17:33.000	60.0851	8.7200
01/07/2025 15:18:03.000	60.5055	8.6600
01/07/2025 15:18:33.000	60.5358	8.6600
01/07/2025 15:19:03.000	60.5306	8.6600
01/07/2025 15:19:33.000	60.5294	8.6600
01/07/2025 15:20:03.000	60.5267	8.6600
01/07/2025 15:20:33.000	60.5131	8.6600
01/07/2025 15:21:03.000	60.5106	8.6600
01/07/2025 15:21:33.000	60.5061	8.6600
01/07/2025 15:22:03.000	60.5051	8.6600
01/07/2025 15:22:33.000	60.5032	8.6600
01/07/2025 15:23:03.000	60.5112	8.6600
01/07/2025 15:23:33.000	60.5061	8.6600
01/07/2025 15:24:03.000	60.5024	8.7200

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-25-TP32/33/34/35/36

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/07/2025 15:24:33.000	60.5021	8.7200
01/07/2025 15:25:03.000	60.5021	8.7200
01/07/2025 15:25:33.000	60.5056	8.7800
01/07/2025 15:26:03.000	60.4981	8.7800
01/07/2025 15:26:33.000	60.4789	8.8500
01/07/2025 15:27:03.000	60.4981	8.8500
01/07/2025 15:27:33.000	60.5176	8.9100
01/07/2025 15:28:03.000	60.5381	8.9700
01/07/2025 15:28:33.000	60.5548	9.0300
01/07/2025 15:29:03.000	60.5571	9.1000
01/07/2025 15:29:33.000	26.3914	9.1600
01/07/2025 15:30:03.000	12.2675	9.2200
01/07/2025 15:30:33.000	9.1042	9.2800
01/07/2025 15:31:03.000	5.7865	9.2800
01/07/2025 15:31:33.000	2.7575	9.3500

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-12-10
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A037FON32E
- data di ricev. oggetto *date of receipt of item*	2024-11-29
- data delle misure *date of measurements*	2024-12-10
- registro di laboratorio *laboratory reference*	0580-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore k vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A037FON32E
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
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LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1007,5 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	100,0	100,0	100,0
199,82	200,0	200,0	200,0
299,73	299,9	300,0	299,9
399,63	399,8	399,9	399,8
499,53	499,6	499,7	499,7
599,44	599,5	599,6	599,5
699,34	699,3	699,4	699,3
799,24	799,2	799,3	799,2
899,14	899,1	899,1	899,1
999,04	999,0	999,0	999,0

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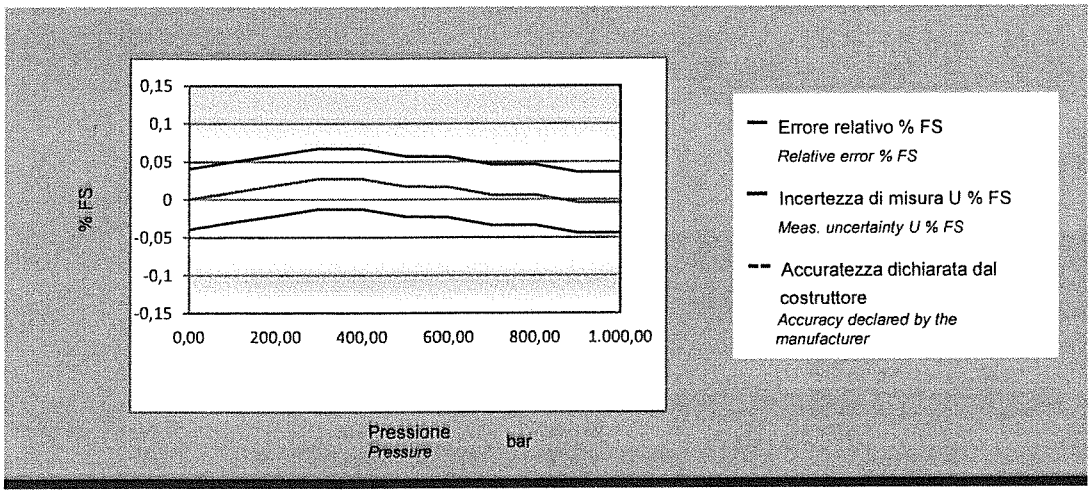
LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,0	0,40
199,82	200,0	0,2	0,0	0,0	0,40
299,73	300,0	0,3	0,0	0,1	0,40
399,63	399,9	0,3	0,0	0,1	0,40
499,53	499,7	0,2	0,1	0,1	0,40
599,44	599,6	0,2	0,0	0,1	0,40
699,34	699,4	0,1	0,0	0,1	0,40
799,24	799,3	0,1	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,0	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,7 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°25-05-TP-036
SUB-SYSTEM N° 25-05

System	25
Sub-System	25-05
Test Pressure	60 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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6. EXTRACT OF SUPPORT LIST AND DETAILS – NOT APPLICABLE
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   - 8.7 TMX25 – Gross Air Leak Test
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

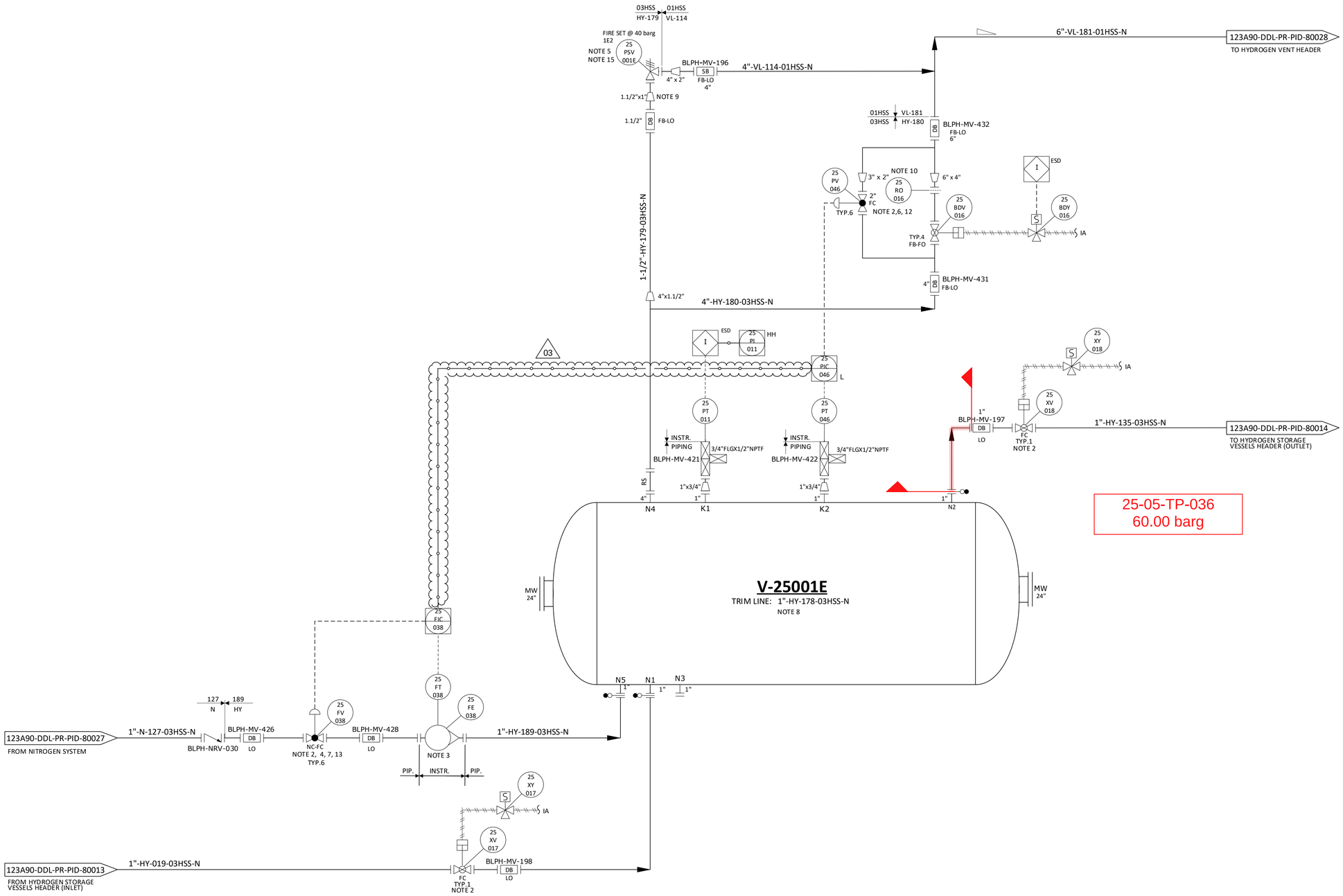
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

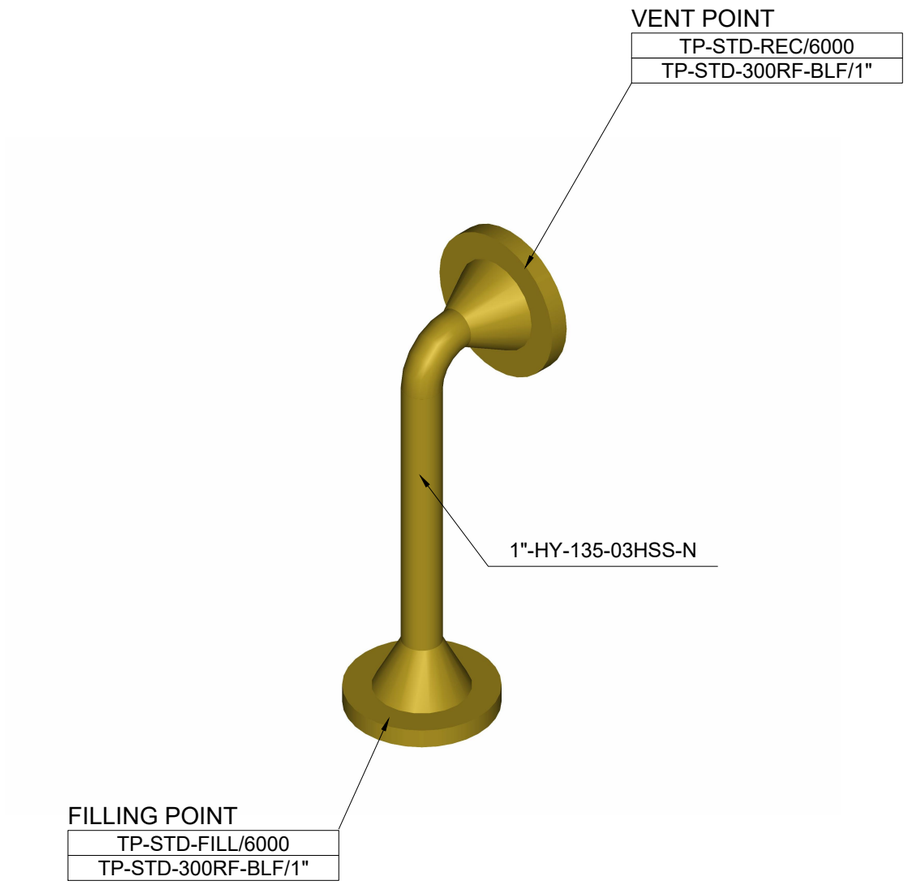
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80019	SHEET 001	REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



25-05-TP-036

60 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
25-05-TP-036

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

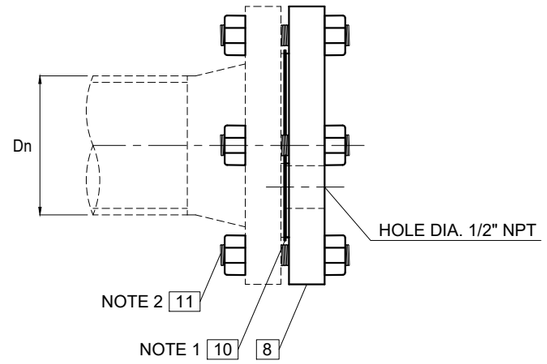
CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-036	TP-STD-300RF-BLF/1"	FLBHCS0018010H	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1	2	2	
TP-036	TP-STD-300RF-BLF/1"	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ø1" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-036	TP-STD-300RF-BLF/1"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	

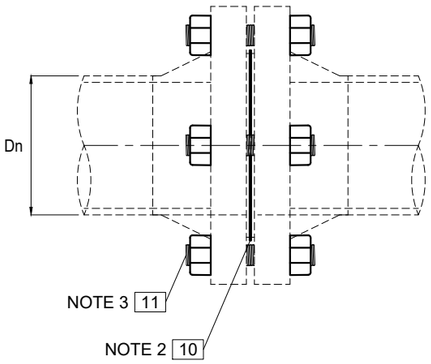
TP-STD-300RF | 300 RF | STANDARD FOR BLIND POINT

TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

MATERIAL LIST			
STD	**POS.**	**DESCRIPTION**	**Q.TY**
TP-STD-300RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-300RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=75 MM	4
TP-STD-300RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=80 MM	4
TP-STD-300RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-300RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=95 MM	4
TP-STD-300RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-300RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-300RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-300RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=115 MM	8
TP-STD-300RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=125 MM	12
TP-STD-300RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=145 MM	12
TP-STD-300RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=160 MM	16
TP-STD-300RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=175 MM	16
TP-STD-300RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=180 MM	20
TP-STD-300RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=195 MM	20
TP-STD-300RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=200 MM	24
TP-STD-300RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=210 MM	24
TP-STD-300RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/2" L=235 MM	24



TP-STD-300RF-BLF/Dn
BLIND FLANGE



TP-STD-300RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

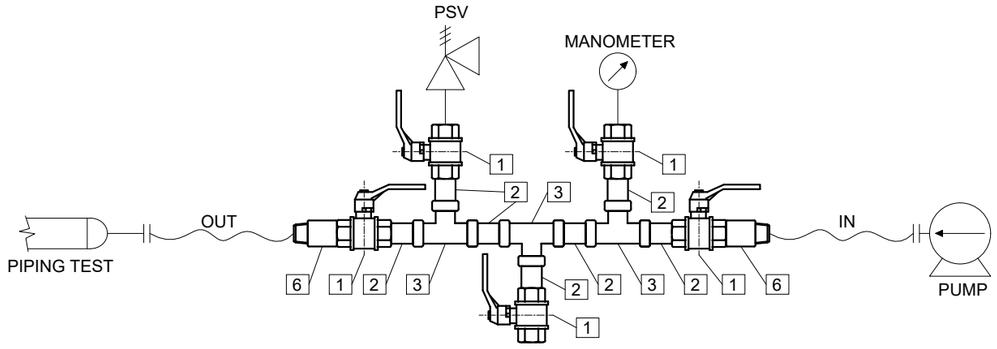
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-300RF
TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_300RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

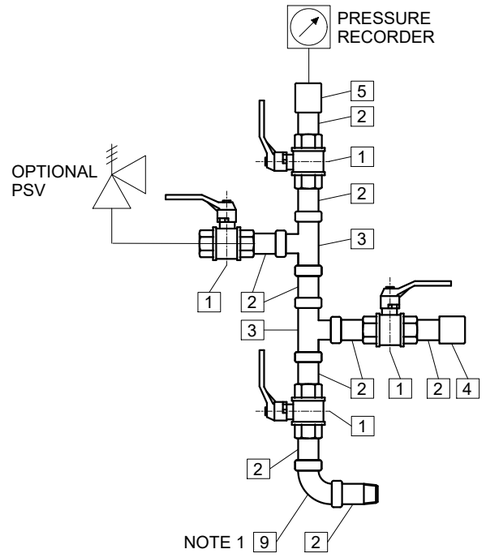
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
53	HY-135	135	1	03HSS	N	3,38	40S	N/A	1"-HY-135-03HSS-N	123A90-DDL-PR-PID-80019	40,00	25	25-05 / 25-08	TP-031/TP-036	Water	60.00	Hydrogen	Stainless Steel	INF	II	6A	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

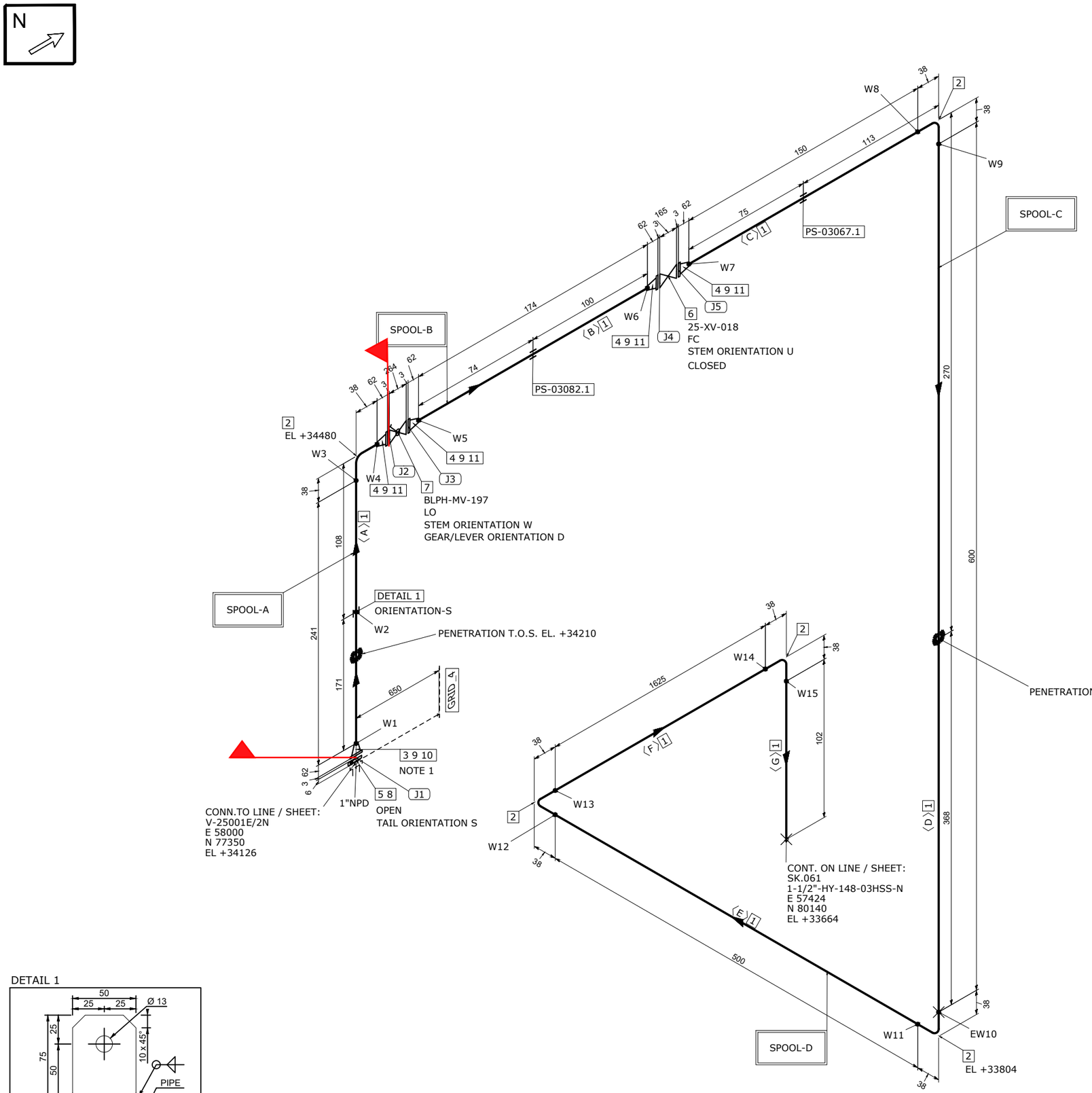
REV. **05**

TITLE

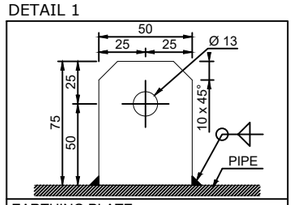
SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
74	123A90-FDL-PP-DI-00053-01	**053**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-HY-135-03HSS-N	30/07/2024	03/09/2024												**01**	**04**		**TP-031/TP-036**



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.4M	8.6
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
3	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	4	7.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
6	1		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	41.0
7	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	13.5
8	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
9	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	5	0.4
10	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	3.7

FABRICATION WEIGHT [kg]	18.4
ERECTION WEIGHT [kg]	60.2
OVERALL WEIGHT [kg]	78.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2		FW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
EW10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	241	BEVEL	BEVEL
B	1	174	BEVEL	BEVEL
C	1	150	BEVEL	BEVEL
D	1	600	BEVEL	BEVEL
E	1	500	BEVEL	BEVEL
F	1	1625	BEVEL	BEVEL
G	1	102	BEVEL	BEVEL

SUPPORT LIST

PS-03082.1
PS-03067.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	3	4.4
B	2	4.1
C	3	3.9
D	5	6.1
MONT	1	60.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

25-05-TP-036

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-135-03HSS-N

SK.053

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00053 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002		FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--			TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION E/W

6. EXTRACT OF SUPPORT LIST & DETAILS

NOT APPLICABLE

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	53	**To**	53
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**	A	**To**	A
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/53/1/_		**01**	**21-10-2024**	**50**	**AZ36**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**23-10-2024**	**A**
03HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				23-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000568	4	Acceptable				23-10-2024				
2/53/1/_		**01**	**22-10-2024**	**50**	**AZ36**			**PL**	**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**05-11-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				23-10-2024				
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000024		Acceptable				05-11-2024				
3/53/1/_		**01**	**31-10-2024**	**60**	**AZ39**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**13-11-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				04-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000892	4	Repeat				10-11-2024				
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	PR	100 %	000979	1	Acceptable				13-11-2024				
4/53/1/_		**01**	**23-10-2024**	**52**	**AZ36**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**04-11-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				25-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000813	4	Acceptable				04-11-2024				

Totals per DWG	**53**	**Prefabrication**	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Accepted	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Accepted	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Accepted	**0,35 m**	**4 Nr. Welds**	**3,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by	
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:	
Progetto/Project	**Hollandse Kust Noord Wind Park Project**				
Commessa/Job	**123A90 - Piping**				
Disciplina/Discipline	**PIPING**				
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 08/01/2025	
RosettiDoc.Num.	**123A90MTR001**				

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
53	01	1	A	03HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W3-W4	
53	01	1	A	03HSS	3	1	Flange WN For Jackscrews ›1" Thk.3,38mm 300LB RF ASTM A182 Gr.F316/316L	S-27133	1724001267	00160	IND.21.6268/QM/U	W1	
53	01	1	A	03HSS	4	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DL364	1724000839	01010	12/230044598/27/REV-00	W4	
53	01	1	A	03HSS	1A	0,241	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
53	01	1	A	03HSS	MESSA A TERRA	1	MESSA A TERRA PL75 x 50 x 5 thk. FORO Ø13	43076	1724000275	00010	929116/002	W2	
53	01	1	B	03HSS	4	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DL364	1724000839	01010	12/230044598/27/REV-00	W5	
53	01	1	B	03HSS	4	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DL364	1724000839	01010	12/230044598/27/REV-00	W6	
53	01	1	B	03HSS	1B	0,174	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
53	01	1	C	03HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W8-W9	
53	01	1	C	03HSS	4	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DL364	1724000839	01010	12/230044598/27/REV-00	W7	
53	01	1	C	03HSS	1C	0,15	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
53	01	1	C	03HSS	1D	0,6	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
53	01	1	D	03HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W11	
53	01	1	D	03HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W12-W13	
53	01	1	D	03HSS	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A403 Gr.WP316/316L	M230689	1724000839	00270	MCP2401-00015-52	W14-W15	
53	01	1	D	03HSS	1E	0,5	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
53	01	1	D	03HSS	1F	1,625	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
53	01	1	D	03HSS	1G	0,102	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	25-05-TP-036	: Test Pack 25-05-TP-036			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003512		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, white rags were used clean the inlet and the outlet points, that were then closed with covers.
3	Temporary means :	Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA

5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	

10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	None.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-04	2025-01-08	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-04T06:00:47.517Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-08T10:39:25.057Z	

ITEM	Tag	25-05-TP-042	: Test Pack 25-05-TP-042			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003553		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	PL
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	PL
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	PL
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	Note
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	OK
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check performed on spool not assembled in erection.
8. Double block bleed valves BLPH-MV-431 and BLPH-MV-433 have not been installed in the line, differently as marked in the isometric.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-09	2025-01-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-09T05:50:01.249Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-13T13:58:39.666Z	

ITEM	Tag	25-05-TP-042	: Test Pack 25-05-TP-042			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003554		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	OK
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-02-20	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:16:51.333Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-20T16:10:09.040Z	

ITEM	Tag	25-05-TP-042	: Test Pack 25-05-TP-042			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003555		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	PL
3	Check that the fluid direction is correct.	PL
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	OK
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments: 1. Checked the painting report made by Vendor and signed by RM coating Dpt.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (ROSETTI MARINO)	
Name	Alex Sanna	Lorenzo Novaga	
Date	2025-02-11	2025-03-06	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-11T15:54:27.687Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-06T15:40:06.805Z	

ITEM	Tag	25-05-TP-042	: Test Pack 25-05-TP-042		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003556	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	10/01/2025	Start time	11:00	End time	11:45
Flow rate	NA	Duration	45 min	Medium T°	NA

Operation Description	Connected the water source to the lowest point of the piping system. Maintained a high flow rate to help dislodging and carry away debrises. Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.
Safety Precautions	Restricting access to the area.
Result and comments	Water has been found clear of solid debris. All contaminants have been expelled.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Luca Mussi	
Date	2025-01-09	2025-01-14	
Signature	Digitaly signed by Emanuele Delfino 2025-01-09T05:50:15.838Z	Digitaly signed by Luca Mussi 2025-01-14T08:20:39.645Z	

ITEM	Tag	25-05-TP-042	: Test Pack 25-05-TP-042			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003557		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX05 — Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	40 barg	Max test pressure	60 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min: See attachment	Max: See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Luca Mussi	
Date	2025-01-09	2025-01-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-09T05:50:26.666Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-14T08:32:12.540Z	

Logger protocol

Protocollo di acquisizione elenco dati

Log no. *N. elenco dati*	123A90-TP_37_38_39_40_41_42_43

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FON32E
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:C5:19:D5)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	01:19:17
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	04:05:30 pm

Logger protocol

Protocollo di acquisizione elenco dati

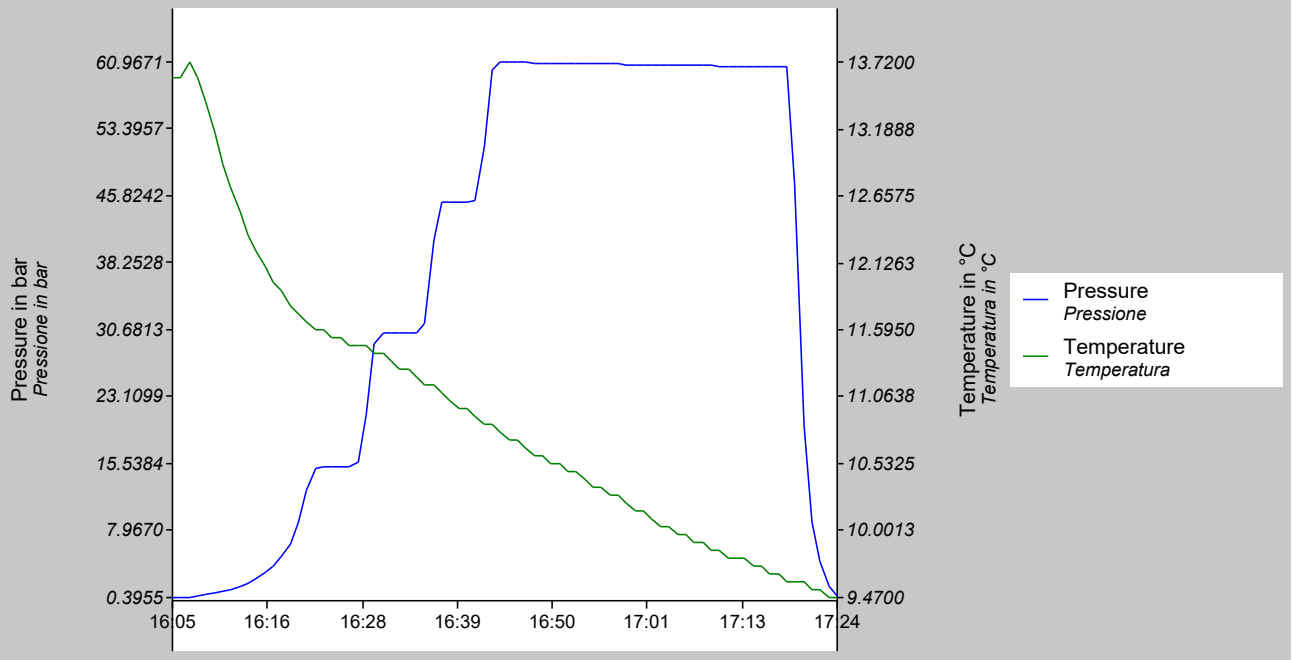
ROSETTI MARINO
Group of Companies

Log no. 123A90-TP_37_38_39_40_41_42_43
N. elenco dati

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/10/2025 16:05:30.000	0.3955	13.6000
01/10/2025 16:06:30.000	0.4070	13.6000
01/10/2025 16:07:30.000	0.4651	13.7200
01/10/2025 16:08:30.000	0.5782	13.6000
01/10/2025 16:09:30.000	0.7170	13.4100
01/10/2025 16:10:30.000	0.8835	13.1600
01/10/2025 16:11:30.000	1.0885	12.9100
01/10/2025 16:12:30.000	1.3665	12.7200
01/10/2025 16:13:30.000	1.7038	12.5300
01/10/2025 16:14:30.000	2.0864	12.3500
01/10/2025 16:15:30.000	2.5521	12.2200
01/10/2025 16:16:30.000	3.1830	12.1000
01/10/2025 16:17:30.000	3.9510	11.9700
01/10/2025 16:18:30.000	4.9905	11.9100
01/10/2025 16:19:30.000	6.4999	11.7800
01/10/2025 16:20:30.000	9.0095	11.7200
01/10/2025 16:21:30.000	12.5645	11.6600

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. 123A90-TP_37_38_39_40_41_42_43
N. elenco dati

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/10/2025 16:22:30.000	15.0895	11.6000
01/10/2025 16:23:30.000	15.1074	11.6000
01/10/2025 16:24:30.000	15.0985	11.5300
01/10/2025 16:25:30.000	15.0963	11.5300
01/10/2025 16:26:30.000	15.0960	11.4700
01/10/2025 16:27:30.000	15.7046	11.4700
01/10/2025 16:28:30.000	21.0992	11.4700
01/10/2025 16:29:30.000	29.0448	11.4100
01/10/2025 16:30:30.000	30.2918	11.4100
01/10/2025 16:31:30.000	30.2802	11.3500
01/10/2025 16:32:30.000	30.2678	11.2800
01/10/2025 16:33:30.000	30.2614	11.2800
01/10/2025 16:34:30.000	30.2517	11.2200
01/10/2025 16:35:30.000	31.4386	11.1600
01/10/2025 16:36:30.000	40.8207	11.1600
01/10/2025 16:37:30.000	45.1987	11.1000
01/10/2025 16:38:30.000	45.1800	11.0300
01/10/2025 16:39:30.000	45.1605	10.9700
01/10/2025 16:40:30.000	45.1525	10.9700
01/10/2025 16:41:30.000	45.2185	10.9100
01/10/2025 16:42:30.000	51.3481	10.8500
01/10/2025 16:43:30.000	60.0419	10.8500
01/10/2025 16:44:30.000	60.9671	10.7800
01/10/2025 16:45:30.000	60.9353	10.7200
01/10/2025 16:46:30.000	60.9111	10.7200
01/10/2025 16:47:30.000	60.8919	10.6600
01/10/2025 16:48:30.000	60.8730	10.6000
01/10/2025 16:49:30.000	60.8527	10.6000
01/10/2025 16:50:30.000	60.8389	10.5300
01/10/2025 16:51:30.000	60.8223	10.5300
01/10/2025 16:52:30.000	60.8080	10.4700
01/10/2025 16:53:30.000	60.7890	10.4700
01/10/2025 16:54:30.000	60.7721	10.4100
01/10/2025 16:55:30.000	60.7529	10.3500
01/10/2025 16:56:30.000	60.7361	10.3500
01/10/2025 16:57:30.000	60.7227	10.2800
01/10/2025 16:58:30.000	60.7101	10.2800
01/10/2025 16:59:30.000	60.6948	10.2200
01/10/2025 17:00:30.000	60.6807	10.1600
01/10/2025 17:01:30.000	60.6629	10.1600
01/10/2025 17:02:30.000	60.6495	10.1000
01/10/2025 17:03:30.000	60.6303	10.0300
01/10/2025 17:04:30.000	60.6124	10.0300
01/10/2025 17:05:30.000	60.5966	9.9700
01/10/2025 17:06:30.000	60.5811	9.9700
01/10/2025 17:07:30.000	60.5662	9.9100
01/10/2025 17:08:30.000	60.5494	9.9100
01/10/2025 17:09:30.000	60.5345	9.8500
01/10/2025 17:10:30.000	60.5131	9.8500

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-TP_37_38_39_40_41_42_43

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/10/2025 17:11:30.000	60.4939	9.7800
01/10/2025 17:12:30.000	60.4779	9.7800
01/10/2025 17:13:30.000	60.4660	9.7800
01/10/2025 17:14:30.000	60.4539	9.7200
01/10/2025 17:15:30.000	60.4361	9.7200
01/10/2025 17:16:30.000	60.4147	9.6600
01/10/2025 17:17:30.000	60.4012	9.6600
01/10/2025 17:18:30.000	60.3807	9.6000
01/10/2025 17:19:30.000	46.9830	9.6000
01/10/2025 17:20:30.000	19.8364	9.6000
01/10/2025 17:21:30.000	9.0072	9.5300
01/10/2025 17:22:30.000	4.5633	9.5300
01/10/2025 17:23:30.000	1.6556	9.4700
01/10/2025 17:24:30.000	0.5472	9.4700

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-12-10
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A037FON32E
- data di ricev. oggetto *date of receipt of item*	2024-11-29
- data delle misure *date of measurements*	2024-12-10
- registro di laboratorio *laboratory reference*	0580-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore k vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A037FON32E
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

WIKA Italia S.r.l. & C. s.a.s.
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I Traversa, n. 8
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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1007,5 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	100,0	100,0	100,0
199,82	200,0	200,0	200,0
299,73	299,9	300,0	299,9
399,63	399,8	399,9	399,8
499,53	499,6	499,7	499,7
599,44	599,5	599,6	599,5
699,34	699,3	699,4	699,3
799,24	799,2	799,3	799,2
899,14	899,1	899,1	899,1
999,04	999,0	999,0	999,0

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

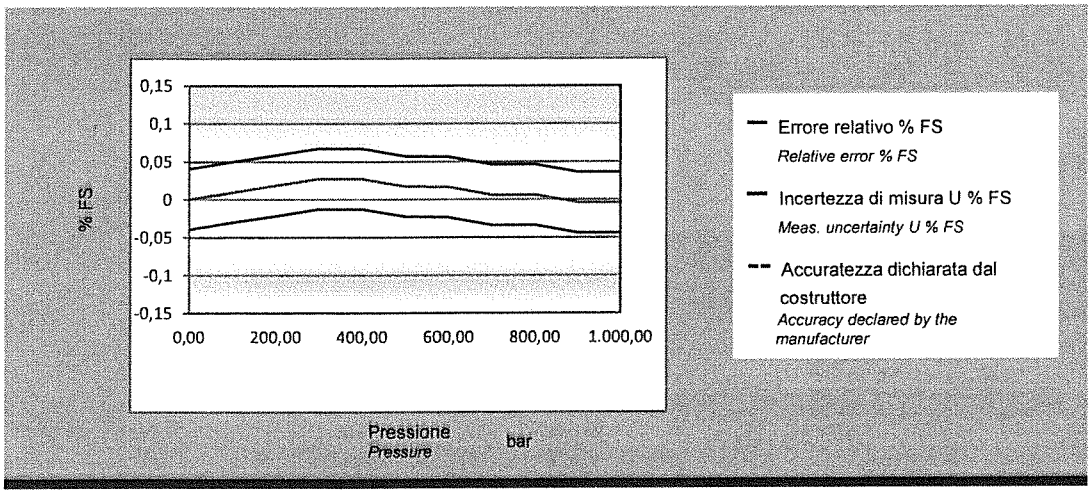
LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,0	0,40
199,82	200,0	0,2	0,0	0,0	0,40
299,73	300,0	0,3	0,0	0,1	0,40
399,63	399,9	0,3	0,0	0,1	0,40
499,53	499,7	0,2	0,1	0,1	0,40
599,44	599,6	0,2	0,0	0,1	0,40
699,34	699,4	0,1	0,0	0,1	0,40
799,24	799,3	0,1	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,0	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,7 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°25-05-TP-042
SUB-SYSTEM N° 25-05

System	25
Sub-System	25-05
Test Pressure	60 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

List of Contents

1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
   - 8.1 CLX02A - Pipework Before test
   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation – NOT APPLICABLE
   - 8.4 CXX02 – Painting Line
   - 8.5 TMX03 – Cleaning
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

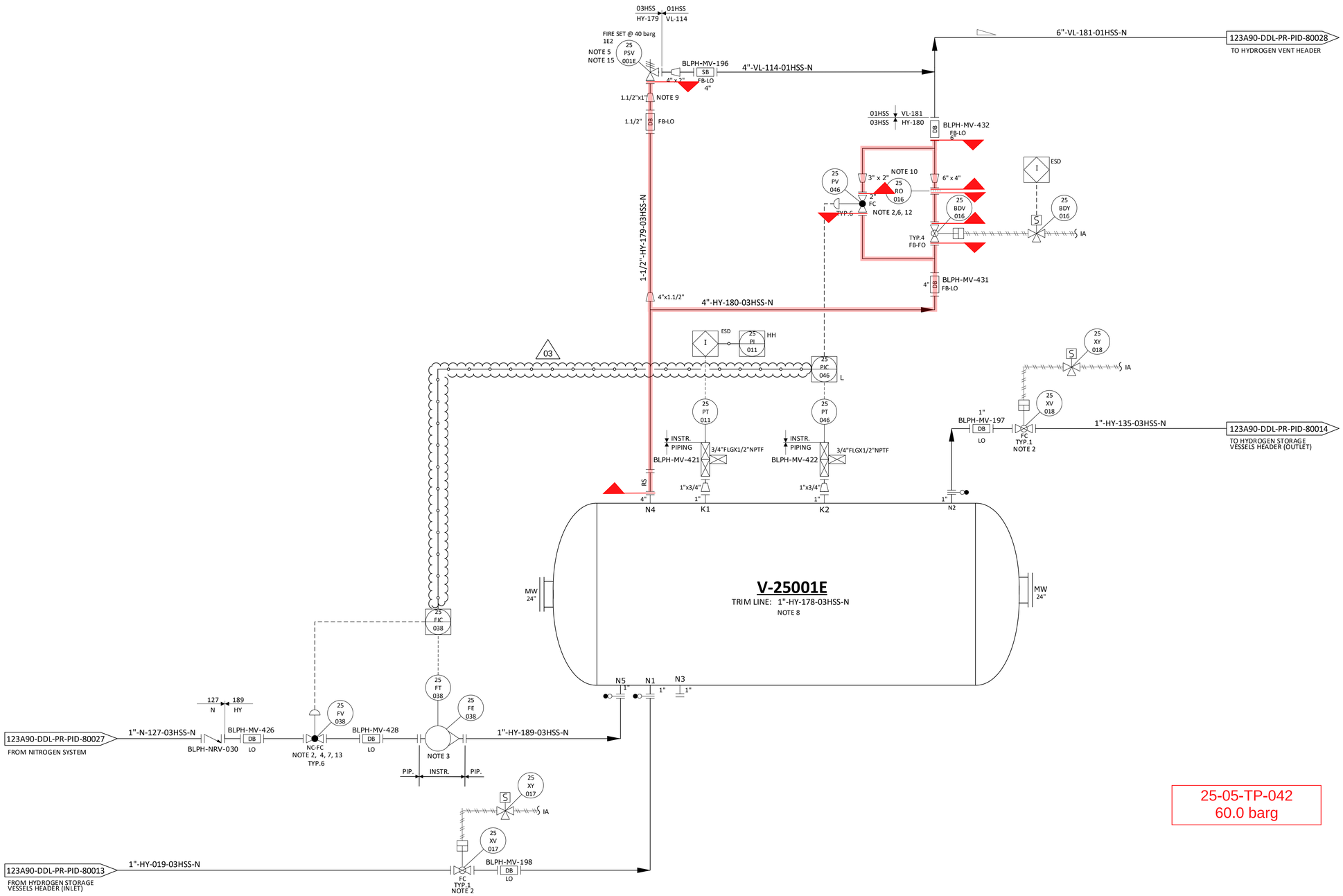
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



25-05-TP-042
60.0 barg

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

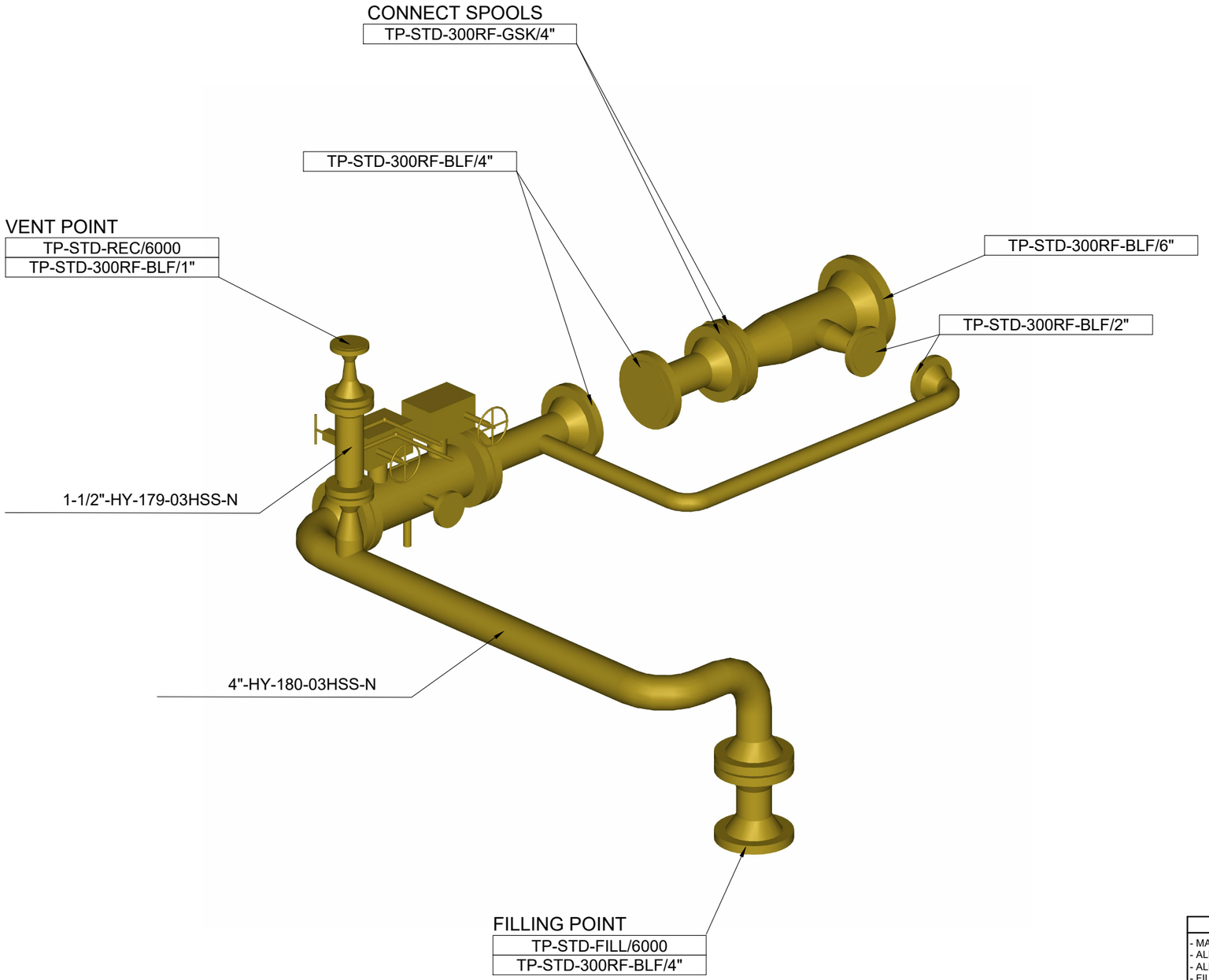
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80019		SHEET 001	REV. 03

File Name = FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



25-05-TP-042

60 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
25-05-TP-042

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

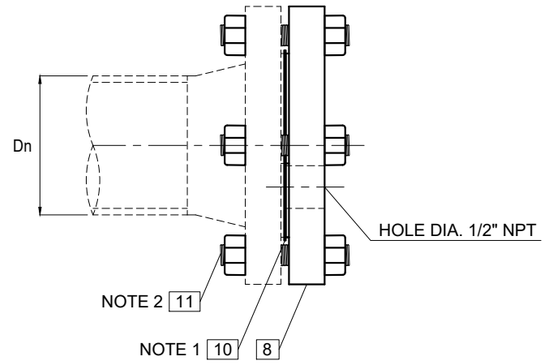
CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-042	TP-STD-300RF-BLF/1"	FLBHCS0018010H	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1	1	1	
TP-042	TP-STD-300RF-BLF/1"	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ø1" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-042	TP-STD-300RF-BLF/1"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	
TP-042	TP-STD-300RF-BLF/2"	FLBHCS0010020H	Flange Blind c/w NPT Hole ø2"x1/2" 300LB RF ASTM/ASME A/SA105	1	2	2	
TP-042	TP-STD-300RF-BLF/2"	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ø2" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-042	TP-STD-300RF-BLF/2"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	2	16	
TP-042	TP-STD-300RF-BLF/4"	FLBHCS0140040H	Flange Blind c/w NPT Hole ø4"x1/2" 300LB RF ASTM/ASME A/SA105	1	3	3	
TP-042	TP-STD-300RF-BLF/4"	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ø4" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	3	3	
TP-042	TP-STD-300RF-BLF/4"	SB20BO01650400	Stud Bolt + 2 Heavy Nuts 3/4" L=115MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3	24	
TP-042	TP-STD-300RF-BLF/6"	FLBHCS0141060H	Flange Blind c/w NPT Hole ø6"x1/2" 300LB RF ASTM/ASME A/SA105	1	1	1	
TP-042	TP-STD-300RF-BLF/6"	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ø6" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-042	TP-STD-300RF-BLF/6"	SB20BO19820400	Stud Bolt + 2 Heavy Nuts 3/4" L=130MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	12	1	12	
TP-042	TP-STD-300RF-GSK/4"	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ø4" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-042	TP-STD-300RF-GSK/4"	SB20BO01650400	Stud Bolt + 2 Heavy Nuts 3/4" L=115MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1	8	

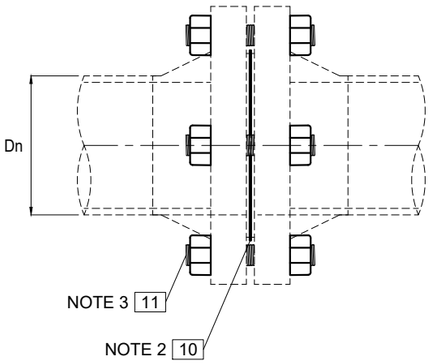
TP-STD-300RF | 300 RF | STANDARD FOR BLIND POINT

TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

MATERIAL LIST			
STD	**POS.**	**DESCRIPTION**	**Q.TY**
TP-STD-300RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-300RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=75 MM	4
TP-STD-300RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=80 MM	4
TP-STD-300RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-300RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=95 MM	4
TP-STD-300RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-300RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-300RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-300RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=115 MM	8
TP-STD-300RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=125 MM	12
TP-STD-300RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=145 MM	12
TP-STD-300RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=160 MM	16
TP-STD-300RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=175 MM	16
TP-STD-300RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=180 MM	20
TP-STD-300RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=195 MM	20
TP-STD-300RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=200 MM	24
TP-STD-300RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=210 MM	24
TP-STD-300RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/2" L=235 MM	24



TP-STD-300RF-BLF/Dn
BLIND FLANGE



TP-STD-300RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

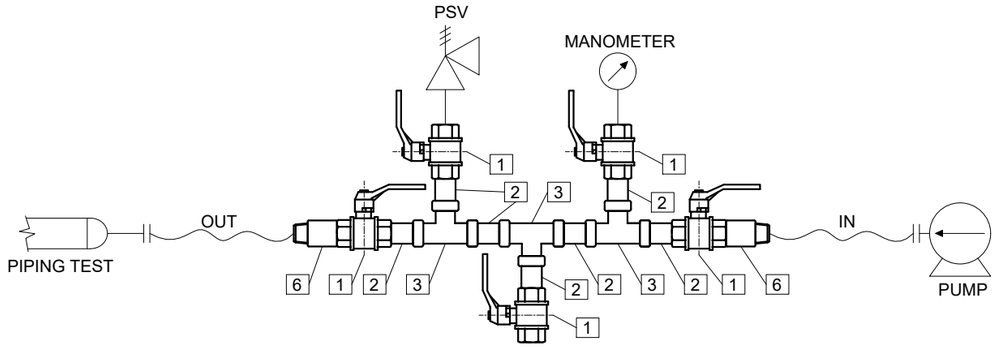
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-300RF
TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_300RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

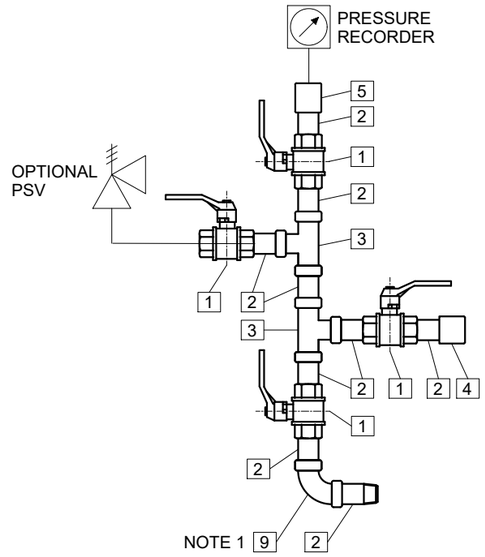
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
83	HY-179	179	1.1/2	03HSS	N	3,68	40S	N/A	1-1/2"-HY-179-03HSS-N	123A90-DDL-PR-PID-80019	40,00	25	25-05	TP-042	Water	60.00	Hydrogen	Stainless Steel	INF	II	6A	RAL 9002
84	HY-180	180	4	03HSS	N	3,05	10S	N/A	4"-HY-180-03HSS-N	123A90-DDL-PR-PID-80019	40,00	25	25-05	TP-042	Water	60.00	Hydrogen	Stainless Steel	SUP	III	6A	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

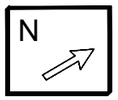
REV. **05**

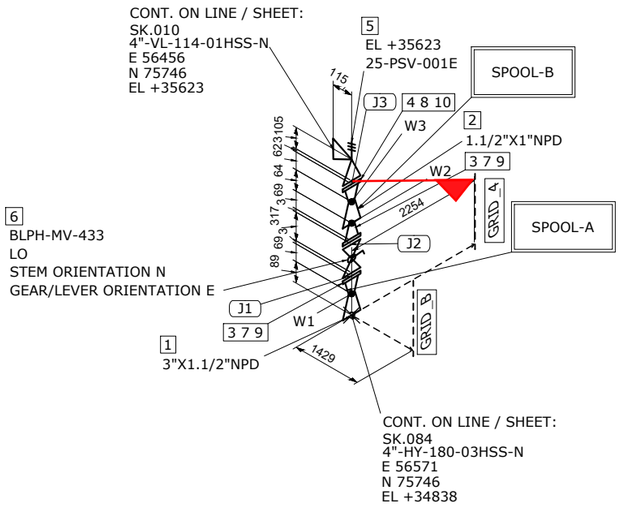
TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
113	123A90-FDL-PP-DI-00083-01	**083**	01	SHOP DRAWING ISOMETRIC - LINE NR 1-1/2"-HY-179-03HSS-N	30/07/2024	03/09/2024												**01**	**04**		**TP-042**
114	123A90-FDL-PP-DI-00084-01	**084**	01	SHOP DRAWING ISOMETRIC - LINE NR 4"-HY-180-03HSS-N	30/07/2024	03/09/2024	17/09/2024											**02**	**05**		**TP-042**





MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	3X1.1/2	REC0SS0128031H	Reducer Concentric ASME B16.9 BW 3,05x3,68 WRS ASTM A403 Gr.WP316/316L	1	0.5
2	1.1/2X1	REC0SS03191H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1.1/2	FLW0SS03481H00	Flange WN ASME B16.5 300LB RF 3,68 FRG ASTM A182 Gr.F316/316L	2	6.5
4	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		Pressure Safety Valve FLG.300/150#RF	1	15.0
6	1.1/2	VLBBNN07201H00	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	40.0
7	1.1/2	GSW0GK11221H00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.2
8	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	3/4	SB20BO23540400	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.1
10	5/8	SB20BO00680300	100 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	9.1
ERECTION WEIGHT [kg]	59.4
OVERALL WEIGHT [kg]	68.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	1.5	3.7
B	2.5	5.3
MONT	0	59.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

25-05-TP-042

MASTER

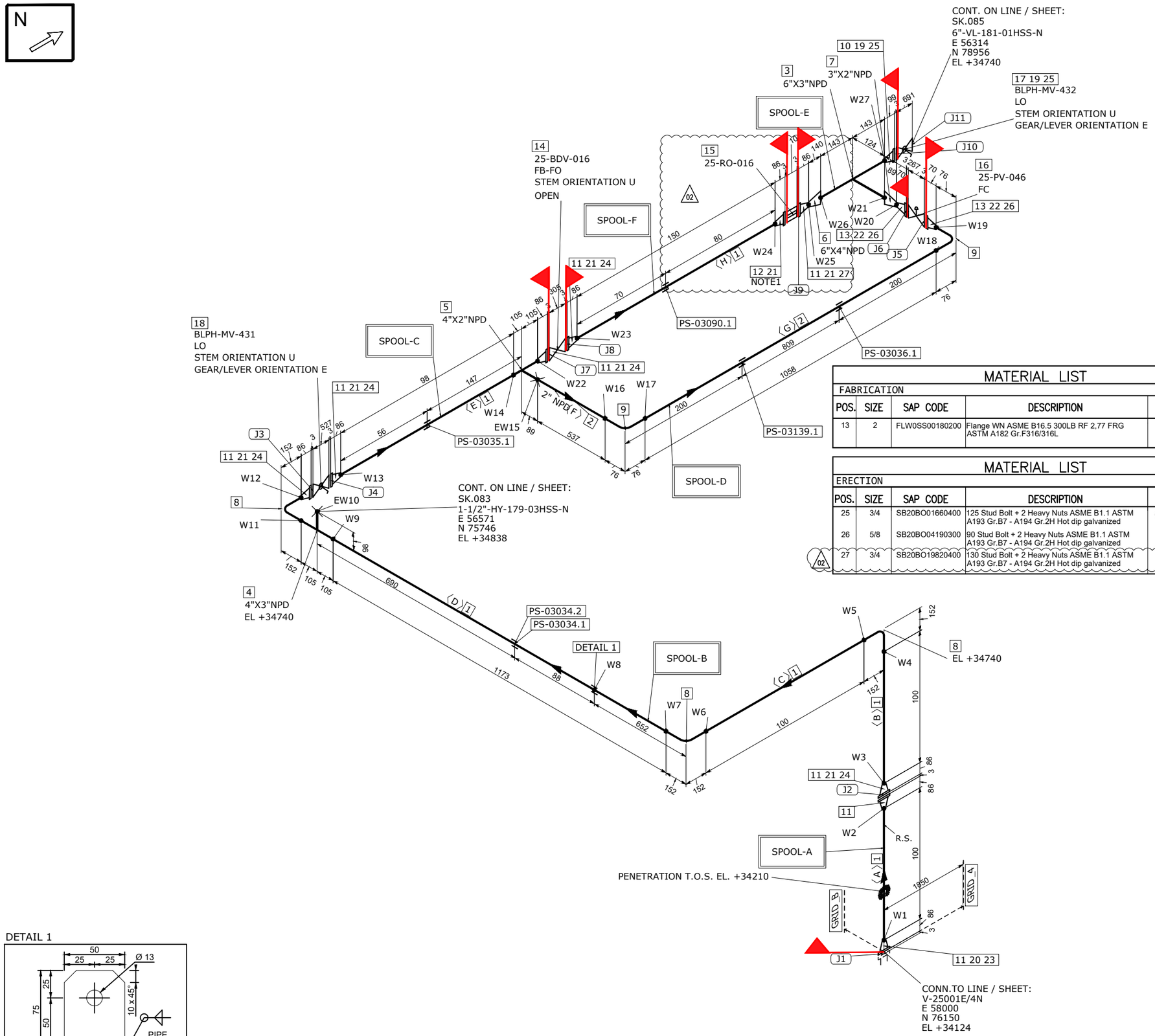
CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-HY-179-03HSS-N

SK.083

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00083		SHEET / OF	1/1
			REV.	01



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

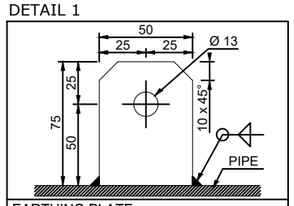
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N
SK.084

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM
DATE: 17-09-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00084
SHEET / OF: 1/1
REV.: 02

25-05-TP-042

MASTER

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

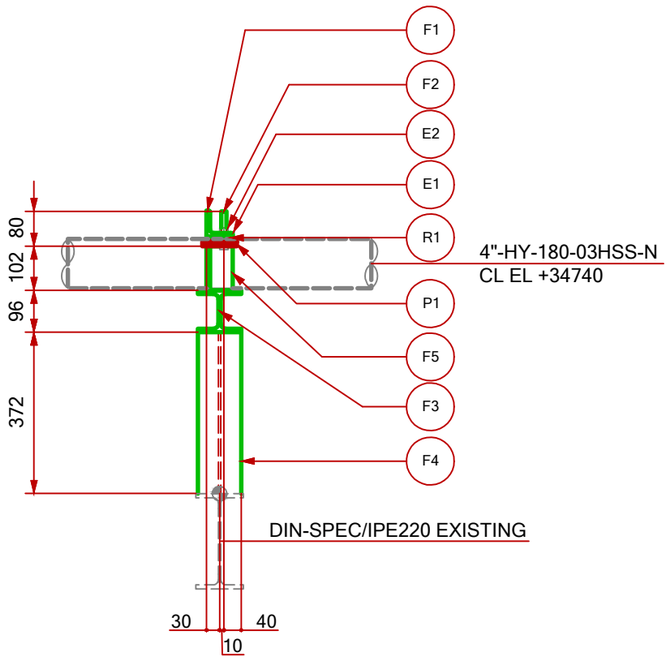
NOTES

1.JACKSCREWS POSITION E\W

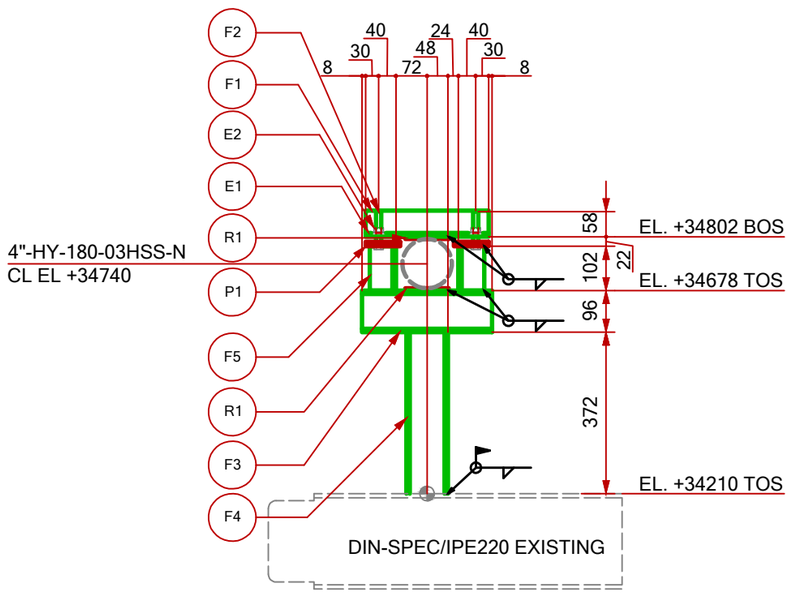
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

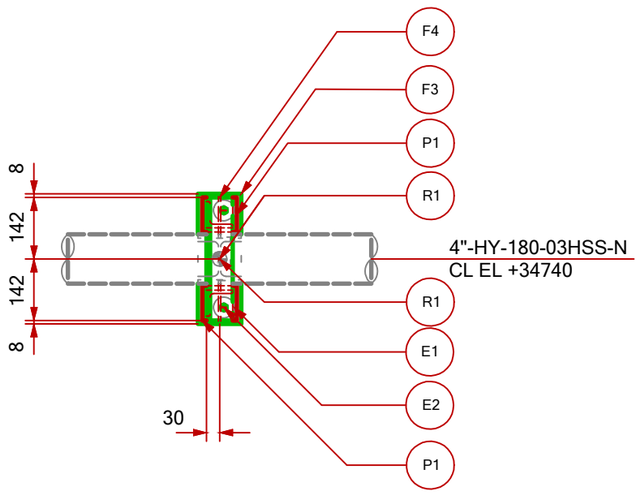
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-03034	B1	PIP	PAU		4"-HY-180-03HSS-N	C-16 - 100 - 50 - 5		1	0,055	0,000	00	19/08/2024	IFR		TP-042
PS-03034	B2	PIP	PAU		4"-HY-180-03HSS-N	C-16 - 100 - 50 - 5		1	0,055	0,000	00	19/08/2024	IFR		TP-042
PS-03035	B1	PIP	PAU		4"-HY-180-03HSS-N	S-212 - 4"		1	0,836	0,000	00	19/08/2024	IFR		TP-042
PS-03036	B1	PIP	PAU		4"-HY-180-03HSS-N	S-211 - 2"		1	0,519	0,000	00	19/08/2024	IFR		TP-042
PS-03090	B1	PIP	PAU		4"-HY-180-03HSS-N	S-211 - 4"		1	0,956	0,000	00	19/08/2024	IFR		TP-042
PS-03139	B1	PIP	PAU		4"-HY-180-03HSS-N	S-211 - 2"		1	0,519	0,000	00	19/08/2024	IFR		TP-042



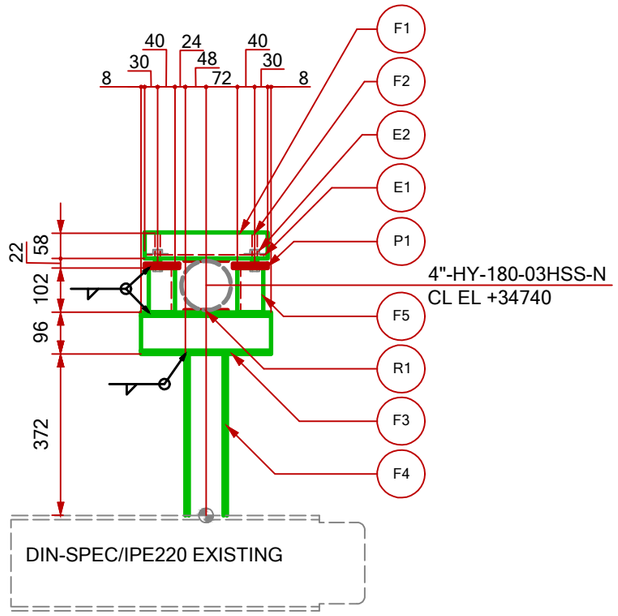
VIEW LOOKING NORTH



VIEW LOOKING WEST



PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	C-16-100-50-5	-	-	2	-	0.06	-
E1	WASHER	M12	-	-	2	-	0.04	-
E2	NUT	M12	-	-	2	-	0.04	-
F1	BEAM	L60x60x8	Carbon Steel	284	1	7.09	2.01	0.068
F2	BOLT	M12x80	-	-	2	-	0.16	-
F3	BEAM	HEA100	Carbon Steel	300	1	16.76	5.03	0.173
F4	BEAM	HEA100	Carbon Steel	372	1	16.76	6.24	0.213
F5	BEAM	L60x60x8	Carbon Steel	102	2	7.09	1.44	0.052
P1	PLATE	10	Carbon Steel	80x80	2	-	1.00	0.012
						TOTAL	16.1	0.52

DATUM
E57260mm
N75746mm
U34210mm

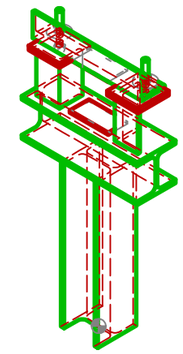
N

4

2254mm

740mm

B



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

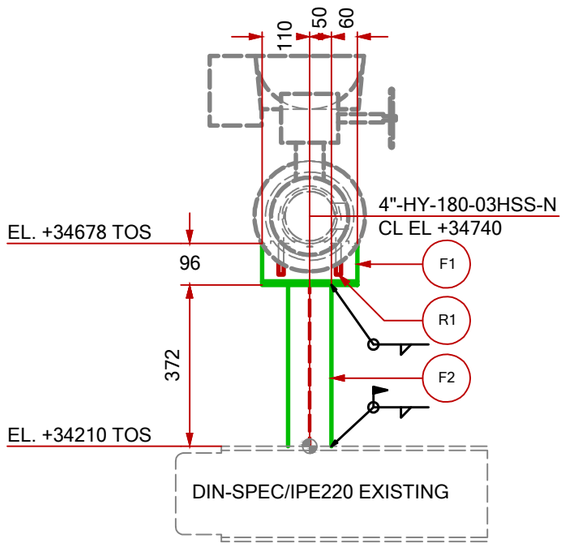
ROSETTI MARINO

TITLE :

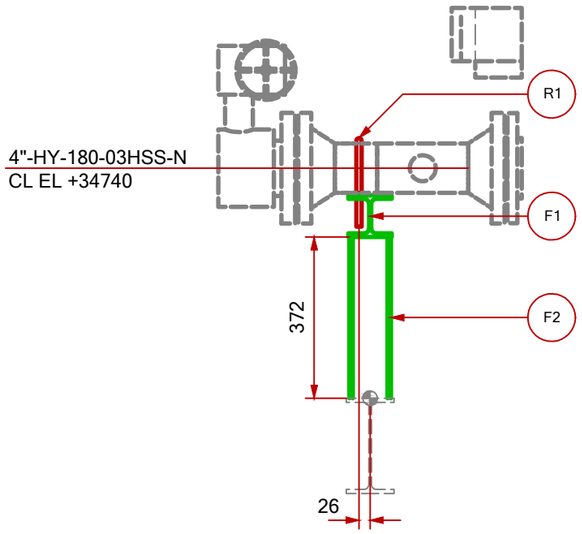
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03034

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

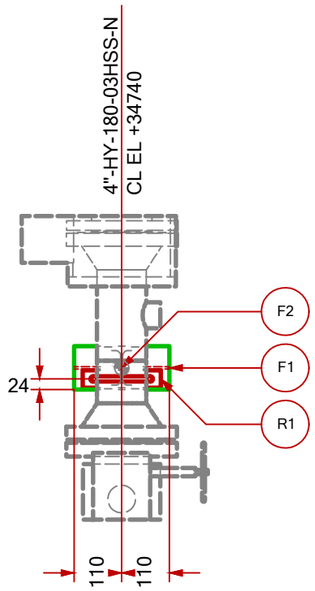
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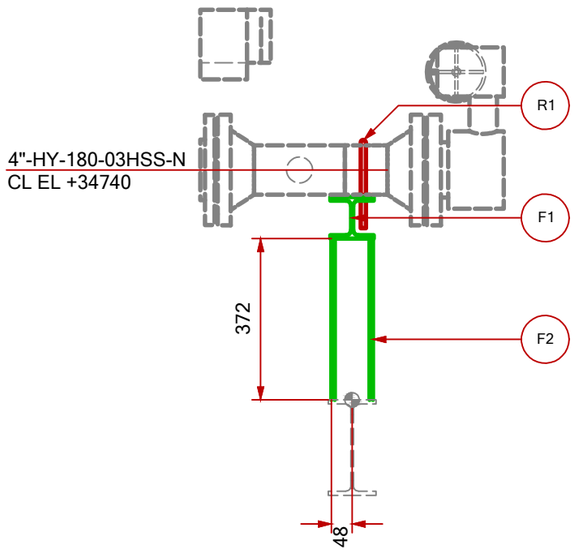
VIEW LOOKING NORTH



VIEW LOOKING WEST



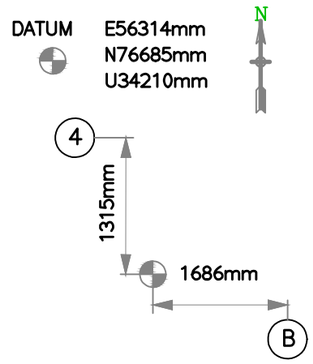
PLAN VIEW

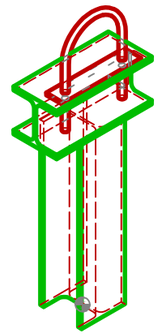


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-212-4"	-	-	1	-	0.80	-
F1	BEAM	HEA100	Carbon Steel	220	1	16.76	3.69	0.128
F2	BEAM	HEA100	Carbon Steel	372	1	16.76	6.23	0.213
						TOTAL	10.7	0.34





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

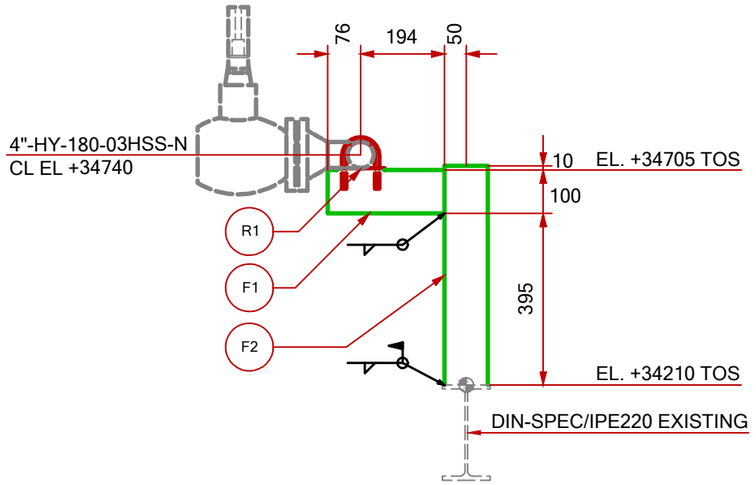
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

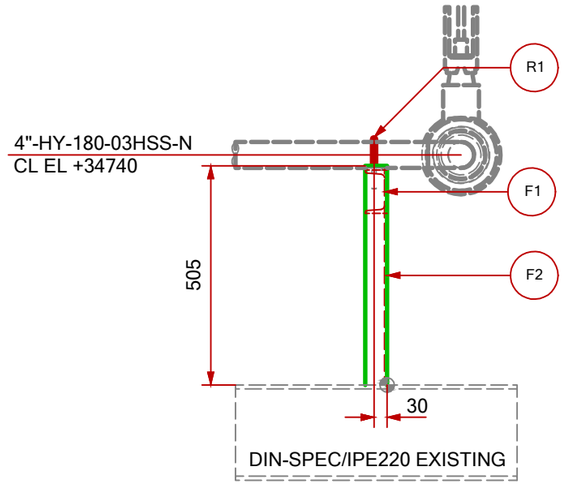
PS-03035

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	1 : 10
DRAWN	CHECKED	APPROVED		DATE	19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1	REV. 00

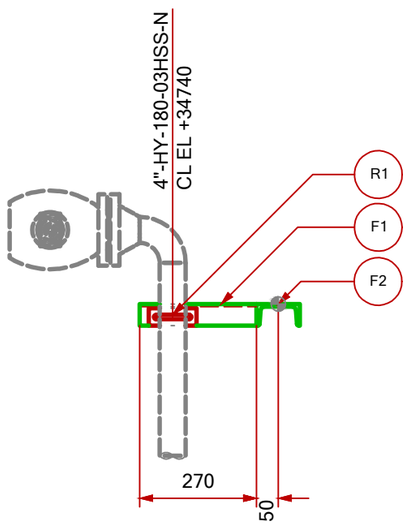
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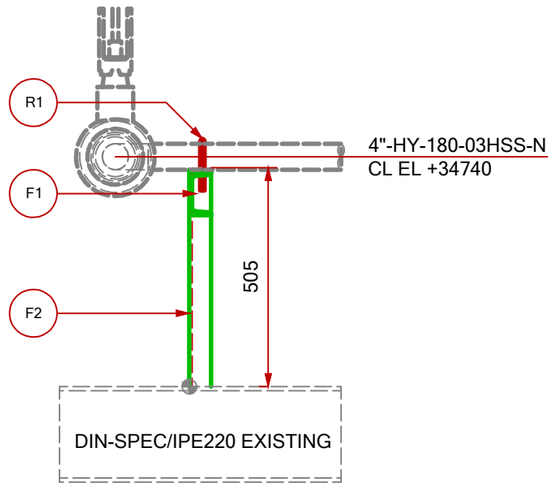
VIEW LOOKING NORTH



VIEW LOOKING WEST



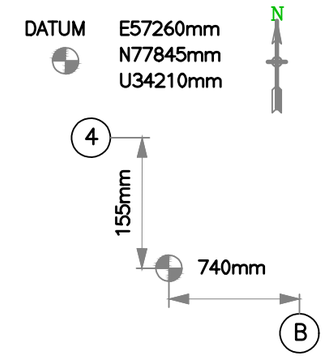
PLAN VIEW

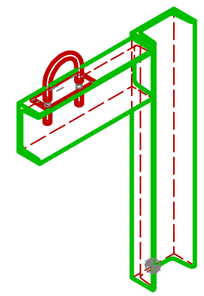


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.50	-
F1	BEAM	UPN100	Carbon Steel	270	1	10.57	2.85	0.103
F2	BEAM	UPN100	Carbon Steel	505	1	10.57	5.34	0.191
						TOTAL	8.7	0.29





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

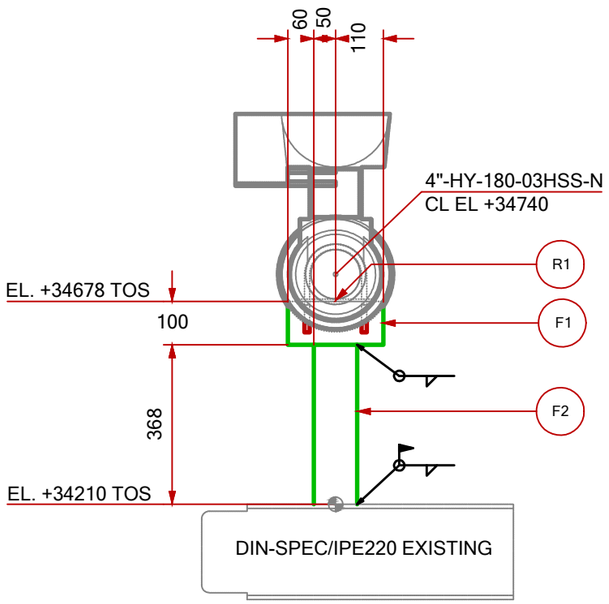
ROSETTI MARINO

TITLE :

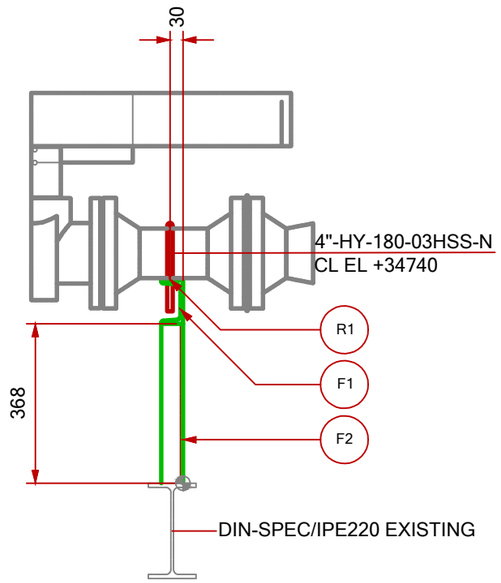
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03036

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

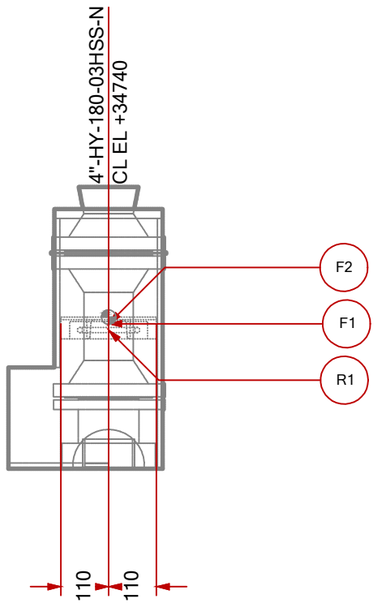
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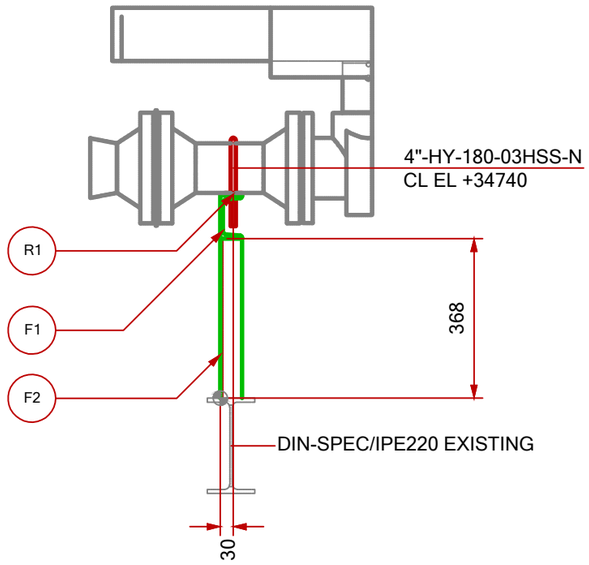
VIEW LOOKING NORTH



VIEW LOOKING WEST



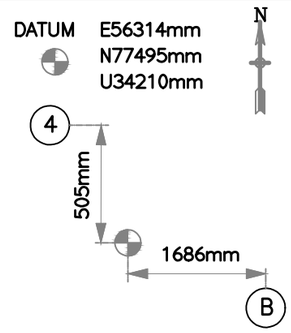
PLAN VIEW

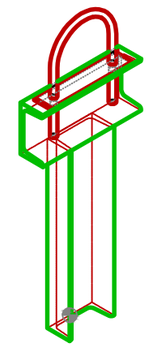


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-4"	-	-	1	-	0.96	-
F1	BEAM	UPN100	Carbon Steel	220	1	10.57	2.33	0.084
F2	BEAM	UPN100	Carbon Steel	368	1	10.57	3.89	0.139
						TOTAL	7.2	0.22





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

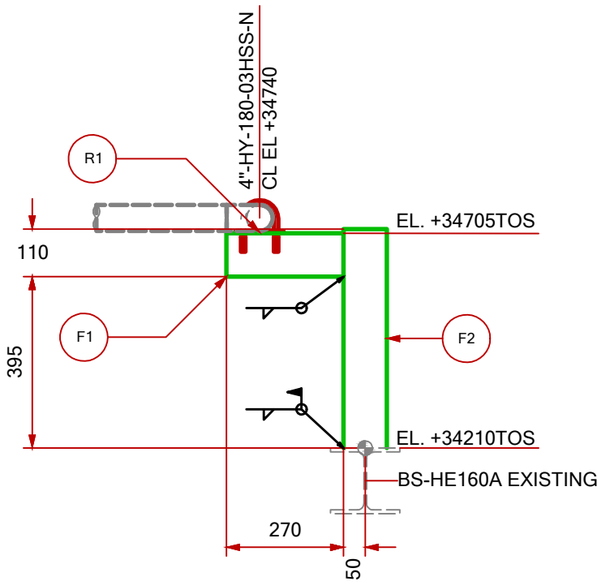
ROSETTI MARINO

TITLE :

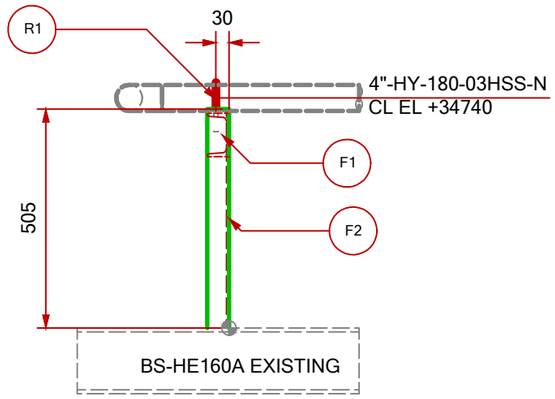
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03090

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 10
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

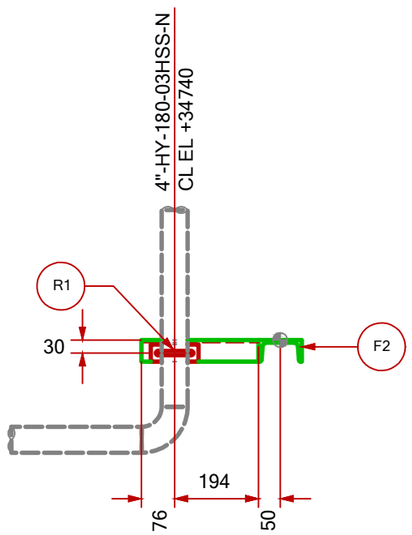
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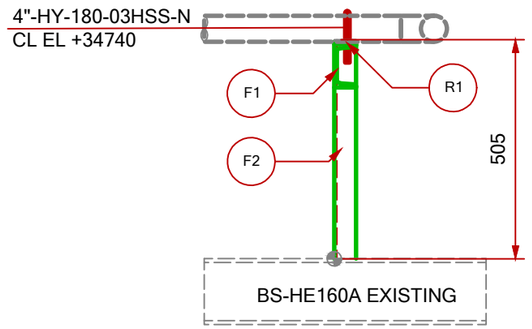
VIEW LOOKING NORTH



VIEW LOOKING WEST



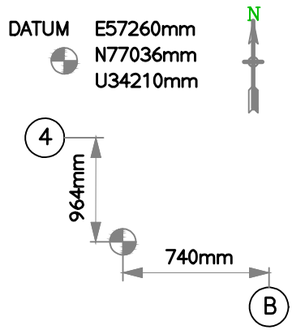
PLAN VIEW

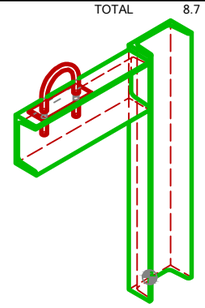


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.50	-
F1	BEAM	UPN100	Carbon Steel	270	1	10.57	2.85	0.103
F2	BEAM	UPN100	Carbon Steel	505	1	10.57	5.34	0.191
						TOTAL	8.7	0.29





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-03139

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

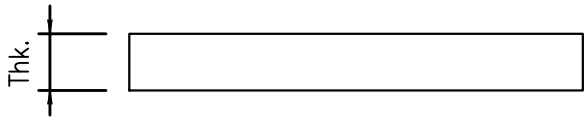
Revision: 0

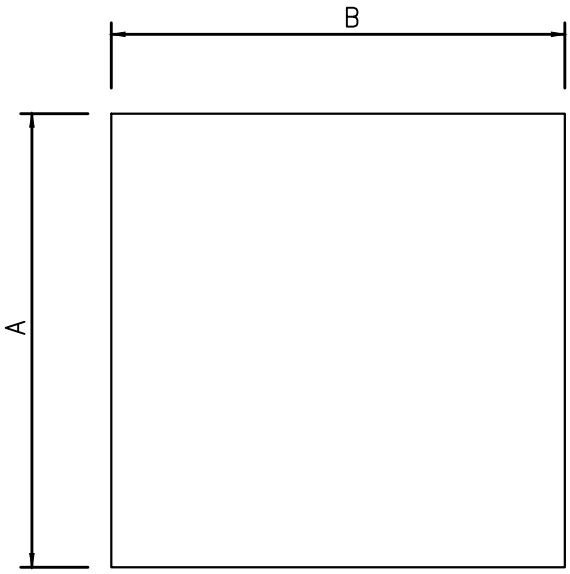
Date: –

PIATTO DI ISOLAMENTO IN PTFE Sp=VARIABILE
PTFE ISOLATING PAD Thk=VARIABLE

C–16

Example of designation : STD – A – B – Thk.
(C–16 – 70 – 100 – 5)





NOTES:
1– MATERIAL: PTFE
2– STRENGHT FOR COMPRESSION (1% DI DEFORMATION) = 5 N/mm² x Thk. (mm)
3– THE PTFE PAD SHALL BE COVERED ALSO AFTER THE POSSIBLE DISPLACEMENTS OF THE PIPING LINE

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

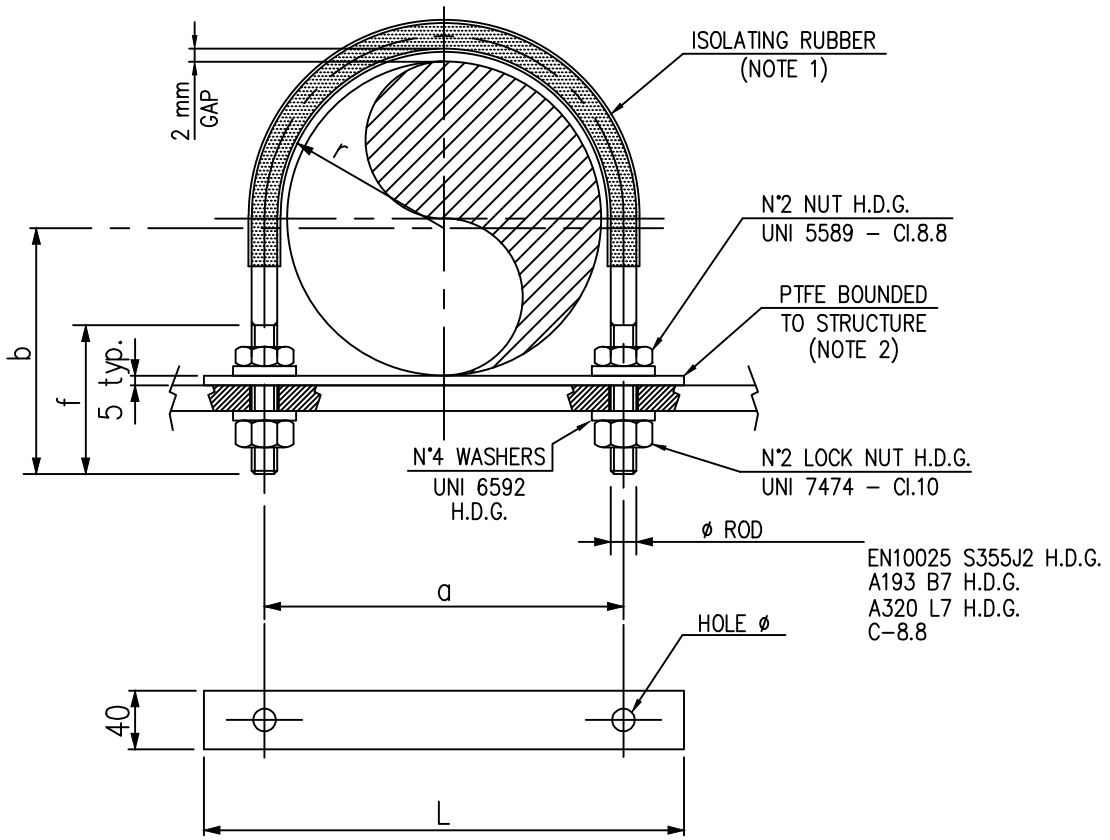
Revision: 0

Date: –

CAVALLOTTI GALVANIZZATI DI GUIDA PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS GUIDE FOR C.S. S.S. AND ALLOY PIPES (NON GRIP)

S–211

Example of designation : STD – PIPE ND"
(S–211 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1
2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

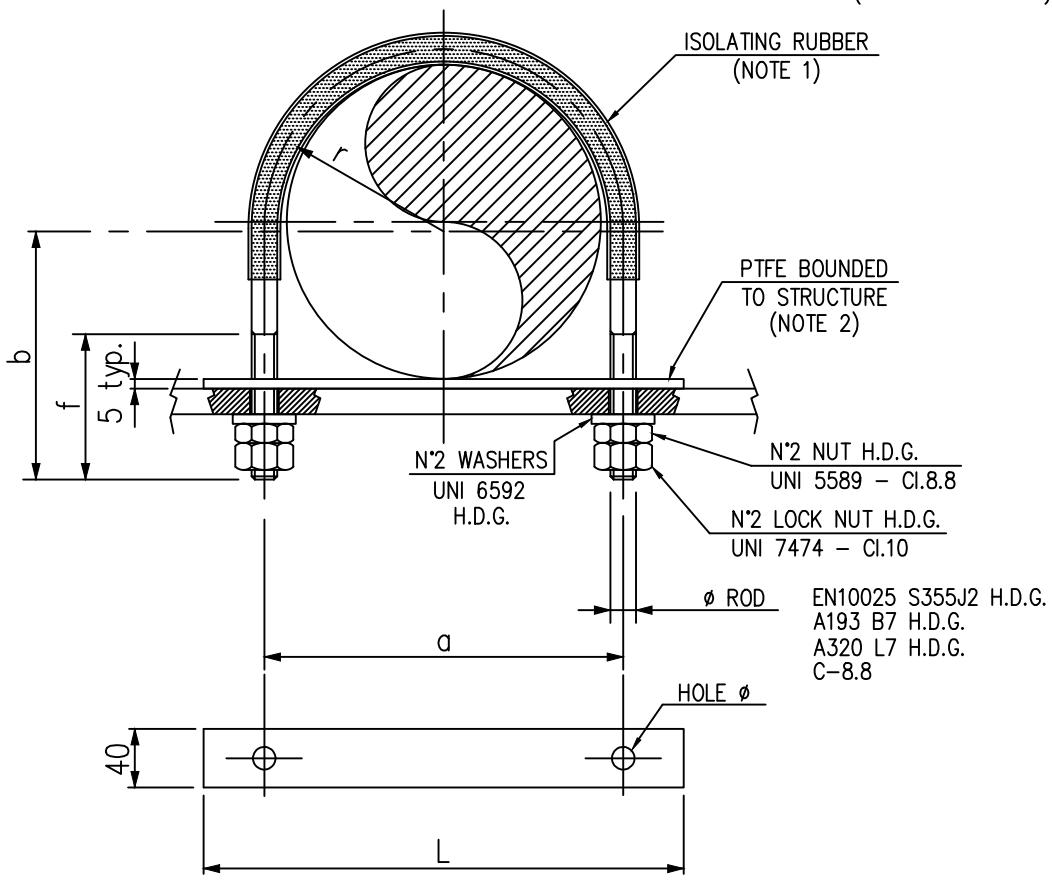
Revision: 0

Date: –

CAVALLOTTI DI FISSAGGIO GALVANIZZATI PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS STOP FOR C.S. S.S. AND ALLOY PIPES

S–212

Example of designation : STD – PIPE ND"
(S–212 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV. ROD	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1

2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	83	**To**	83
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons.	Accept. Date	Spool
1/83/1/_		**01**	**09-10-2024**	**35**	**AZ35**			**RED**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**16-10-2024**	**A**
03HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				10-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000446	3	Acceptable				16-10-2024				
2/83/1/_		**01**	**10-10-2024**	**38**	**AZ35**			**FWN**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**16-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				11-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000451	3	Acceptable				16-10-2024				
3/83/1/_		**01**	**10-10-2024**	**38**	**AZ35**			**RED**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**16-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				11-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000395	4	Acceptable				16-10-2024				

Totals per DWG	**83**	**Prefabrication**	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**3 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 09/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
83	01	1	A	03HSS	1	1	Reducer Concentric BW ›3"x1.1/2" Thk.3.05mmx3.68mm ASTM A403 Gr.WP316/316L	1074624	1724000839	00360	1074624	W1	
83	01	1	A	03HSS	3	1	Flange WN ›1.1/2" Thk.3.68mm 300LB RF ASTM A182 Gr.F316/316L	CH-18895	1724000839	01050	1673F/23-24-21	W1	
83	01	1	B	03HSS	2	1	Reducer Concentric BW ›1.1/2"x1" Thk.3.68mmx3.38mm ASTM A403 Gr.WP316/316L	1163621	1724000839	00390	1163621	W2-W3	
83	01	1	B	03HSS	3	1	Flange WN ›1.1/2" Thk.3.68mm 300LB RF ASTM A182 Gr.F316/316L	CH-18895	1724000839	01050	1673F/23-24-21	W2	
83	01	1	B	03HSS	4	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DJ346	1724000839	01010	12/230039622/57/REV-00	W3	

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	84	**To**	84
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**A**
03HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000547	3	Acceptable					22-10-2024			
2/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000548	3	Acceptable					22-10-2024			
3/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000687	4	Acceptable					29-10-2024			
4/84/1/_		**02**	**16-10-2024**	**43**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					17-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000688	4	Acceptable					29-10-2024			
5/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000689	4	Acceptable					29-10-2024			
6/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000690	4	Acceptable					29-10-2024			
7/84/1/_		**02**	**17-10-2024**	**44**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					18-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000691	4	Acceptable					29-10-2024			
8/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**PL**	**50,00 mm**	**5,00 mm**	**FILL**	**0,050 m**	**P**	**S.S.**	**C1A**	**GTAW**	**F**	**21-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
		LP	FIN	Weld Completion		IDL-QCI-LP 0002 01	BV	100 %	000010		Acceptable					21-10-2024			
9/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000692	4	Acceptable					29-10-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
9/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
10/84/1/_		**02**	**28-12-2024**	**109**	**AX84**			**TEE**	**3,00 in**	**3,05 mm**	**V**	**0,279 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**02-01-2025**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				30-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001108	3	Repeat				30-12-2024				
		RT	DRF	After Film Repeat		IDL-QCI-RT 0036 00	PR	100 %	001109	1	Acceptable				02-01-2025				
11/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**TEE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				16-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000693	4	Acceptable				29-10-2024				
12/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**ELB**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**29-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				16-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000694	4	Acceptable				29-10-2024				
13/84/1/_		**02**	**11-10-2024**	**40**	**AZ39**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				14-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000549	3	Acceptable				22-10-2024				
14/84/1/_		**02**	**11-10-2024**	**40-78-80**	**AZ39**	**Welding + Repair done**		**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**21-11-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				14-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000551	3	Repair			0,008 m	22-10-2024				
	Repair 13-11-2024	VIS	R 1 DRI	After Repair		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	C1B		GTAW+SMAW	15-11-2024				
		RT	R 1 DRI	After Repair		IDL-QCI-RT 0036 00	PR	100 %	001012	3	Repair			0,008 m	15-11-2024				
	Repair 19-11-2024	VIS	R 2 DRI	After Repair		123A90-PML-QHSE-PRO-00103 Rev 00	AMRT	100 %	OK		Acceptable	C1A		GTAW	20-11-2024				
		RT	R 2 DRI	After Repair		IDL-QCI-RT 0036 00	AA	100 %	001016	3	Acceptable				21-11-2024				
15/84/1/_		**02**	**28-12-2024**	**109**	**AX84**			**TEE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**M**	**S.S.**	**C1A**	**GTAW**	**BW**	**30-12-2024**	
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				30-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001106	3	Acceptable				30-12-2024				
16/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**29-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				16-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000678	4	Acceptable				29-10-2024				
17/84/1/_		**02**	**17-10-2024**	**44**	**AZ39**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**29-10-2024**	**D**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
17/84/1/_		**02**	**17-10-2024**	**44**	**AZ39**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**29-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				18-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000679	4	Acceptable				29-10-2024				
18/84/1/_		**02**	**17-10-2024**	**44**	**AZ39**			**PIPE**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**21-11-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				18-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	001015	3	Acceptable				21-11-2024				
19/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**29-10-2024**	**D**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				16-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	100 %	000680	4	Acceptable				29-10-2024				
20/84/1/_		**02**	**11-10-2024**	**40**	**AZ39**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**16-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				14-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000420	3	Acceptable				16-10-2024				
21/84/1/_		**02**	**11-10-2024**	**40**	**AZ39**			**RED**	**3,00 in**	**3,05 mm**	**V**	**0,279 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**16-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				14-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000425	3	Acceptable				16-10-2024				
22/84/1/_		**02**	**11-10-2024**	**40**	**AZ39**			**TEE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**C**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				14-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000550	3	Acceptable				22-10-2024				
23/84/1/_		**02**	**11-10-2024**	**40**	**AZ39**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				14-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000545	3	Acceptable				22-10-2024				
24/84/1/_		**02**	**11-10-2024**	**40**	**AZ39**			**PIPE**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**22-10-2024**	**F**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				14-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000546	3	Acceptable				22-10-2024				
25/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**E**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				16-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000575	3	Acceptable				23-10-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
25/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**FWN**	**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**E**
26/84/1/_		**02**	**15-10-2024**	**42**	**AZ39**			**RED**	**6,00 in**	**7,11 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**23-10-2024**	**E**
1	VIS		FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
	RT		FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000582	3	Acceptable					23-10-2024			
27/84/1/_		**02**	**15-10-2024**	**42-57-81-82-83**	**AZ39**	**Welding + Repair done**		**TEE**	**6,00 in**	**7,11 mm**	**V**	**0,528 m**	**P**	**S.S.**	**C1B**	**GTAW+SMAW**	**BW**	**17-12-2024**	**E**
					AZ36	**Welding + Repair done**													
					AZ53	**Repair done**													
1	VIS		FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					16-10-2024			
	RT		FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000583	3	Repair			0,040 m		23-10-2024			
Repair 29-10-2024	VIS	R 1	DRI	After Repair		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	C1B			GTAW+SMAW	30-10-2024			
	RT	R 1	DRI	After Repair		IDL-QCI-RT 0036 00	AA	100 %	001026	3	Repair			0,022 m		25-11-2024			
Repair 27-11-2024	VIS	R 2	DRI	After Repair		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	C1B			GTAW+SMAW	28-11-2024			
	RT	R 2	DRI	After Repair		IDL-QCI-RT 0036 00	PR	100 %	001027	3	Repair			0,020 m		29-11-2024			
Cut 03-12-2024	VIS	C 1	DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	C1B			GTAW+SMAW	05-12-2024			
	RT	C 1	DTA	After Cutting		IDL-QCI-RT 0036 00	AA	100 %	001043	3	Repair			0,020 m		06-12-2024			
Repair 12-12-2024	VIS	R 1	DRI	After Repair		123A90-PML-QHSE-PRO-00103 Rev 00	AMRT	100 %	OK		Acceptable	C1B			GTAW+SMAW	16-12-2024			
	RT	R 1	DRI	After Repair		IDL-QCI-RT 0036 00	AA	100 %	001068	3	Acceptable					17-12-2024			

Totals per DWG	**84**	**Prefabrication**	**8,10 m**	**25 Nr. Welds**	**89,00 inch**
		Erection	**0,47 m**	**2 Nr. Welds**	**5,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**8,57 m**	**27 Nr. Welds**	**94,00 inch**
		Accepted	**8,57 m**	**27 Nr. Welds**	**94,00 inch**
		Repaired	**0,12 m**	**6 Nr. Welds**	**32,00 inch**
Totals by Discipline		**Prefabrication**	**8,10 m**	**25 Nr. Welds**	**89,00 inch**
		Erection	**0,47 m**	**2 Nr. Welds**	**5,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**8,57 m**	**27 Nr. Welds**	**94,00 inch**
		Accepted	**8,57 m**	**27 Nr. Welds**	**94,00 inch**
		Repaired	**0,12 m**	**6 Nr. Welds**	**32,00 inch**
Totals by Project		**Prefabrication**	**8,10 m**	**25 Nr. Welds**	**89,00 inch**
		Erection	**0,47 m**	**2 Nr. Welds**	**5,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**8,57 m**	**27 Nr. Welds**	**94,00 inch**
		Accepted	**8,57 m**	**27 Nr. Welds**	**94,00 inch**
		Repaired	**0,12 m**	**6 Nr. Welds**	**32,00 inch**

Cliente/Contractor	CROSSWIND	Preparato da/Prepared by	Controllato da/Checked by
SubContrattista/SubContractor	ROSETTIMARINO/GROUPOFCOMPANY	Nome/Name: Antonio Galesi	Nome/Name:
Progetto/Project	Hollandse Kust Noord Wind Park Project		
Commessa/Job	123A90 - Piping		
Disciplina/Discipline	PIPING		
TitoloDocumento/DocumentTitle	Material Traceability Report	StatoDocumento/Document Status:	
RosettiDoc.Num.	123A90MTR001		

Approvato da/Approved by	
Nome/Name:	
Data/Date:	09/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
84	02	1	A	03HSS	11	1	Flange WN ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	DK476	1724000839	01040	12/230041537/26/REV-00	W1	
84	02	1	A	03HSS	11	1	Flange WN ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	DG350	1724000839	01040	12/230025685/18/REV-00	W2	
84	02	1	A	03HSS	1A	0,1	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
84	02	1	B	03HSS	4	1	Tee Reducing BW ›4"x3" Thk.3.05mmx3.05mm ASTM A403 Gr.WP316/316L	MN036-1	1724000839	00550	PSA3-FT-47169	W9-W11	
84	02	1	B	03HSS	8	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W4-W5	
84	02	1	B	03HSS	8	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W6-W7	
84	02	1	B	03HSS	8	1	90 Deg Elbow Long Radius BW ›4" Thk.3.05mm ASTM A403 Gr.WP316/316L	M230735	1724000839	00290	MCP2401-00015-19	W11-W12	
84	02	1	B	03HSS	11	1	Flange WN ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	DK476	1724000839	01040	12/230041537/26/REV-00	W3	
84	02	1	B	03HSS	11	1	Flange WN ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	DK476	1724000839	01040	12/230041537/26/REV-00	W12	
84	02	1	B	03HSS	1B	0,1	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
84	02	1	B	03HSS	1C	0,1	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
84	02	1	B	03HSS	1D	1,173	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
84	02	1	B	03HSS	MESSA A TERRA	1	MESSA A TERRA PL75 x 50 x 5 thk. FORO Ø13	43076	1724000275	00010	929116/002	W8	
84	02	1	C	03HSS	5	1	Tee Reducing BW ›4"x2" Thk.3.05mmx2.77mm ASTM A403 Gr.WP316/316L	MN094-1	1724001267	00400	PSA3-FT-49124	W14-W22	
84	02	1	C	03HSS	11	1	Flange WN ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	EA085	1724000839	01040	12/240000620/40/REV-01	W13	
84	02	1	C	03HSS	11	1	Flange WN ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	DK476	1724000839	01040	12/230041537/26/REV-00	W22	
84	02	1	C	03HSS	1E	0,098	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		
84	02	1	D	03HSS	9	1	90 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A403 Gr.WP316/316L	1482623	1724000839	00260	1482623	W16-W17	
84	02	1	D	03HSS	9	1	90 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A403 Gr.WP316/316L	1482623	1724000839	00260	1482623	W18-W19	
84	02	1	D	03HSS	13	1	Flange WN ›2" Thk.2.77mm 300LB RF ASTM A182 Gr.F316/316L	DL010	1724001267	00120	100028548/53 REV.1	W19	
84	02	1	D	03HSS	2F	0,537	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
84	02	1	D	03HSS	2G	1,058	Pipe 60.3mm(2") thk.2.77mm ASTM A312 Gr.TP316/316L	235632	1724000839	00070	WSSL/SP-316L/0951/1223		
84	02	1	E	03HSS	3	1	Tee Reducing BW ›6"x3" Thk.7.11mmx3.05mm ASTM A403 Gr.WP316/316L	M0070-1	1724001267	00420	PSA3-FT-46697	W21-W26-W27	
84	02	1	E	03HSS	6	1	Reducer Concentric BW ›6"x4" Thk.7.11mmx3.05mm ASTM A403 Gr.WP316/316L	MO070-1	1724000839	00400	PSA3-FT-46698	W25-W26	
84	02	1	E	03HSS	7	1	Reducer Concentric BW ›3"x2" Thk.3.05mmx2.77mm ASTM A403 Gr.WP316/316L	JO030-1	1724001267	00330	PSA3-FT-47131	W20-W21	
84	02	1	E	03HSS	10	1	Flange WN ›6" Thk.7.11mm 300LB RF ASTM A182 Gr.F316/316L	CH-16164	1724000839	01030	EXP/21-22/01811-56	W27	
84	02	1	E	03HSS	11	1	Flange WN ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	EA085	1724000839	01040	12/240000620/40/REV-01	W25	
84	02	1	E	03HSS	13	1	Flange WN ›2" Thk.2.77mm 300LB RF ASTM A182 Gr.F316/316L	DL010	1724001267	00120	100028548/53 REV.1	W20	
84	02	1	F	03HSS	11	1	Flange WN ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	DK476	1724000839	01040	12/230041537/26/REV-00	W23	
84	02	1	F	03HSS	12	1	Flange WN For Jackscrews ›4" Thk.3.05mm 300LB RF ASTM A182 Gr.F316/316L	CH-21767	1724001267	00150	EXP/24-25/00069-35	W24	
84	02	1	F	03HSS	1H	0,15	Pipe 114.3mm(4") thk.3.05mm ASTM A312 Gr.TP316/316L	NJ113	1724000839	00080	462		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	25-05-TP-042	: Test Pack 25-05-TP-042			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003560		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Luca Mussi	
Date	2025-01-15	2025-01-16	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T06:23:48.225Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-16T15:54:48.748Z	

ITEM	Tag	25-05-TP-056	: Test Pack 25-05-TP-056			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003645		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	NA
4	Check that pipework at pump and vessel nozzles are free from spring.	Note
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	Note
6	Check bolt tightening and flange management (excluded battery limit joints).	NA
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	NA
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Note 4, 5: to be checked during Flange Management activity.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	rodeo	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2024-12-02T14:15:02.774Z	PROVERLIS Digitaly signed by Massimo Bruschi 2024-12-02T15:46:37.724Z	

ITEM	Tag	25-05-TP-056	: Test Pack 25-05-TP-056			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003646		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	OK
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	Rosetti Marino	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-02-07	2025-02-07	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:20:00.114Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-07T14:37:43.565Z	

ITEM	Tag	25-05-TP-056	: Test Pack 25-05-TP-056			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003647		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX02 Painting Line

1	Check that the completed painting is in accordance with the specifications covering quality and thickness.	OK
2	Check that the color coding conforms to the specifications.	PL
3	Check that the fluid direction is correct.	PL
4	Check that line marking is correct.	NA
5	Check that the painting of piping systems and of the equipment is "touched-up" and conforms to the specifications.	OK
6	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	IMPRESA DONELLI	RM (Rosetti Marino)	
Name	Alex Sanna	Kangi Albonetti	
Date	2025-02-07	2025-02-11	
Signature	PROVERLIS Digitaly signed by Alex Sanna 2025-02-07T06:20:53.067Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-02-11T08:24:55.615Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	25-05-TP-056	: Test Pack 25-05-TP-056		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003648	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	06-12-24	Start time	09:50	End time	10:05
Flow rate	NA	Duration	15 min	Medium T°	NA

Operation Description	Connected the water source to the lowest point of the piping system. Maintained a high flow rate to help dislodging and carry away debrises. Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.
Safety Precautions	Delimit the test area.
Result and comments	All contaminants are expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	rodeo	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2024-12-02	2024-12-06	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2024-12-02T14:15:23.053Z	PROVERLIS Digitaly signed by Massimo Bruschi 2024-12-06T16:48:50.413Z	

ROSETTI MARINO | CROSSWIND

ITEM	Tag	25-05-TP-056	: Test Pack 25-05-TP-056		Dwg	123A90-DDL-PR-PID-80019	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003649	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	40 barg	Max test pressure	60 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	rodeo	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2024-12-02	2024-12-24	
Signature	Digitaly signed by Emanuele Delfino 2024-12-02T14:15:52.492Z	Digitaly signed by Lorenzo Novaga 2024-12-24T12:03:50.758Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-025-TP52_53_54_55_56_57

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILNH2N
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:E0:AF)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	01:17:08
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	10:11:26 am

Logger protocol

Protocollo di acquisizione elenco dati

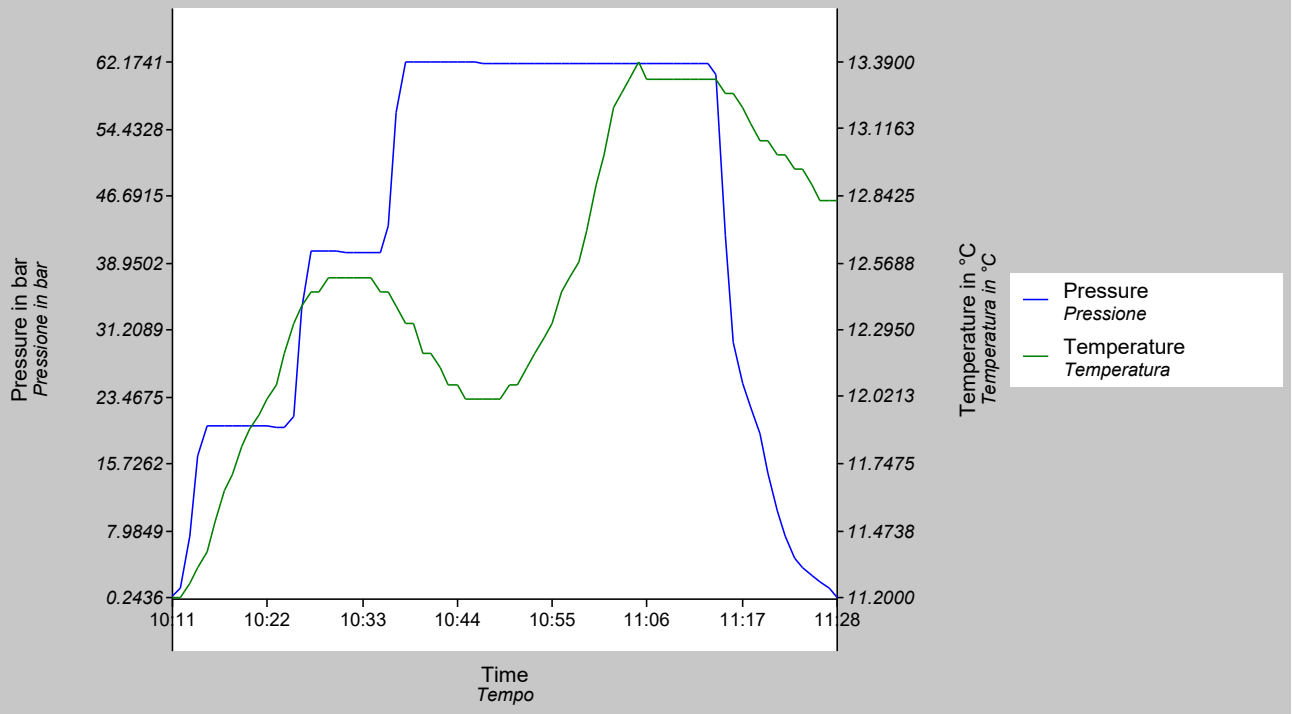
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-025-TP52_53_54_55_56_57

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
12/06/2024 10:11:26.000	0.3612	11.2000
12/06/2024 10:12:26.000	1.4159	11.2000
12/06/2024 10:13:26.000	7.2994	11.2600
12/06/2024 10:14:26.000	16.5768	11.3200
12/06/2024 10:15:26.000	20.0904	11.3900
12/06/2024 10:16:26.000	20.0725	11.5100
12/06/2024 10:17:26.000	20.0566	11.6400
12/06/2024 10:18:26.000	20.0454	11.7000
12/06/2024 10:19:26.000	20.0350	11.8200
12/06/2024 10:20:26.000	20.0267	11.8900
12/06/2024 10:21:26.000	20.0187	11.9500
12/06/2024 10:22:26.000	20.0099	12.0100
12/06/2024 10:23:26.000	20.0029	12.0700
12/06/2024 10:24:26.000	19.9944	12.2000
12/06/2024 10:25:26.000	21.1206	12.3200
12/06/2024 10:26:26.000	33.6541	12.3900
12/06/2024 10:27:26.000	40.2903	12.4500

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-025-TP52_53_54_55_56_57

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
12/06/2024 10:28:26.000	40.3015	12.4500
12/06/2024 10:29:26.000	40.2858	12.5100
12/06/2024 10:30:26.000	40.2614	12.5100
12/06/2024 10:31:26.000	40.2230	12.5100
12/06/2024 10:32:26.000	40.2087	12.5100
12/06/2024 10:33:26.000	40.1934	12.5100
12/06/2024 10:34:26.000	40.1813	12.5100
12/06/2024 10:35:26.000	40.1747	12.4500
12/06/2024 10:36:26.000	43.2564	12.4500
12/06/2024 10:37:26.000	56.3206	12.3900
12/06/2024 10:38:26.000	62.1741	12.3200
12/06/2024 10:39:26.000	62.1682	12.3200
12/06/2024 10:40:26.000	62.1481	12.2000
12/06/2024 10:41:26.000	62.1363	12.2000
12/06/2024 10:42:26.000	62.1198	12.1400
12/06/2024 10:43:26.000	62.1078	12.0700
12/06/2024 10:44:26.000	62.0987	12.0700
12/06/2024 10:45:26.000	62.0897	12.0100
12/06/2024 10:46:26.000	62.0836	12.0100
12/06/2024 10:47:26.000	62.0720	12.0100
12/06/2024 10:48:26.000	62.0579	12.0100
12/06/2024 10:49:26.000	62.0506	12.0100
12/06/2024 10:50:26.000	62.0447	12.0700
12/06/2024 10:51:26.000	62.0393	12.0700
12/06/2024 10:52:26.000	62.0286	12.1400
12/06/2024 10:53:26.000	62.0201	12.2000
12/06/2024 10:54:26.000	62.0103	12.2600
12/06/2024 10:55:26.000	61.9977	12.3200
12/06/2024 10:56:26.000	61.9867	12.4500
12/06/2024 10:57:26.000	61.9799	12.5100
12/06/2024 10:58:26.000	61.9743	12.5700
12/06/2024 10:59:26.000	61.9737	12.7000
12/06/2024 11:00:26.000	61.9681	12.8900
12/06/2024 11:01:26.000	61.9658	13.0100
12/06/2024 11:02:26.000	61.9619	13.2000
12/06/2024 11:03:26.000	61.9641	13.2600
12/06/2024 11:04:26.000	61.9640	13.3200
12/06/2024 11:05:26.000	61.9529	13.3900
12/06/2024 11:06:26.000	61.9438	13.3200
12/06/2024 11:07:26.000	61.9399	13.3200
12/06/2024 11:08:26.000	61.9332	13.3200
12/06/2024 11:09:26.000	61.9266	13.3200
12/06/2024 11:10:26.000	61.9255	13.3200
12/06/2024 11:11:26.000	61.9115	13.3200
12/06/2024 11:12:26.000	61.9065	13.3200
12/06/2024 11:13:26.000	61.9023	13.3200
12/06/2024 11:14:26.000	60.7830	13.3200
12/06/2024 11:15:26.000	42.0667	13.2600
12/06/2024 11:16:26.000	29.8345	13.2600

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-025-TP52_53_54_55_56_57

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
12/06/2024 11:17:26.000	24.9703	13.2000
12/06/2024 11:18:26.000	22.3076	13.1400
12/06/2024 11:19:26.000	19.1109	13.0700
12/06/2024 11:20:26.000	14.5868	13.0700
12/06/2024 11:21:26.000	10.1913	13.0100
12/06/2024 11:22:26.000	7.4256	13.0100
12/06/2024 11:23:26.000	4.8203	12.9500
12/06/2024 11:24:26.000	3.6290	12.9500
12/06/2024 11:25:26.000	2.7521	12.8900
12/06/2024 11:26:26.000	2.0327	12.8200
12/06/2024 11:27:26.000	1.3745	12.8200
12/06/2024 11:28:26.000	0.2436	12.8200

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www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0514-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-10-31
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILNH2N
- data di ricev. oggetto *date of receipt of item*	2024-10-24
- data delle misure *date of measurements*	2024-10-31
- registro di laboratorio *laboratory reference*	0514-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILNH2N
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato	Sebacate
Pressure medium	*Sebacate*
Livello di riferimento	Superficie di tenuta DUT
Refence height (for reference value)	*Sealing face DUT*
Posizione di montaggio	verticale
Position during calibration	*vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1016,6 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	100,0	99,9
199,82	199,9	199,9	199,9
299,72	299,8	299,9	299,8
399,63	399,7	399,8	399,7
499,53	499,6	499,6	499,6
599,43	599,5	599,5	599,5
699,33	699,3	699,4	699,4
799,24	799,2	799,2	799,2
899,13	899,1	899,1	899,1
999,03	999,0	999,0	999,0

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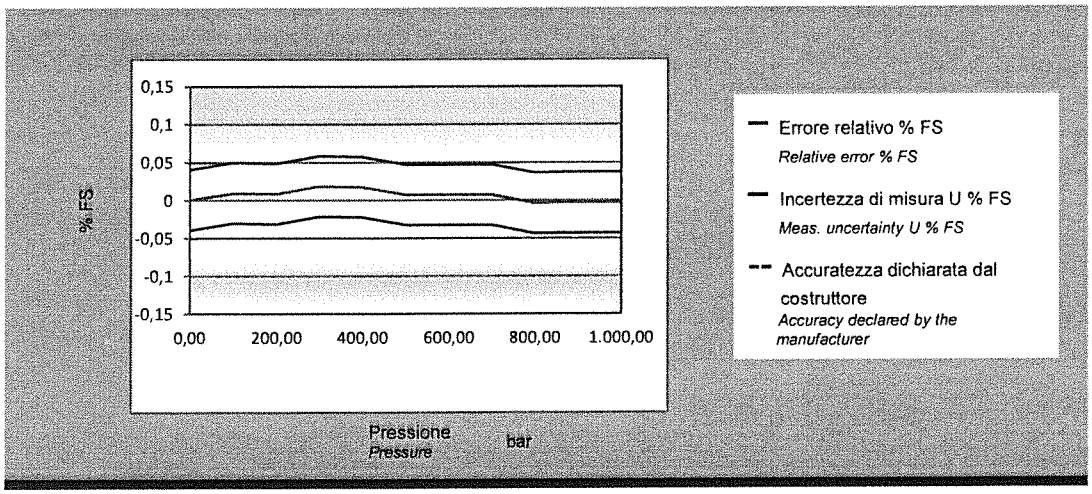
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,1	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,72	299,9	0,2	0,0	0,1	0,40
399,63	399,8	0,2	0,0	0,1	0,40
499,53	499,6	0,1	0,0	0,0	0,40
599,43	599,5	0,1	0,0	0,0	0,40
699,33	699,4	0,1	0,1	0,1	0,40
799,24	799,2	0,0	0,0	0,0	0,40
899,13	899,1	0,0	0,0	0,0	0,40
999,03	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,6 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°25-05-TP-056
SUB-SYSTEM N° 25-05

System	25
Sub-System	25-05
Test Pressure	60 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS – NOT APPLICABLE
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   - 8.2 CLX02B - Pipework After Test
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   - 8.4 CXX02 – Painting Line
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   - 8.7 TMX25 – Gross Air Leak Test
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

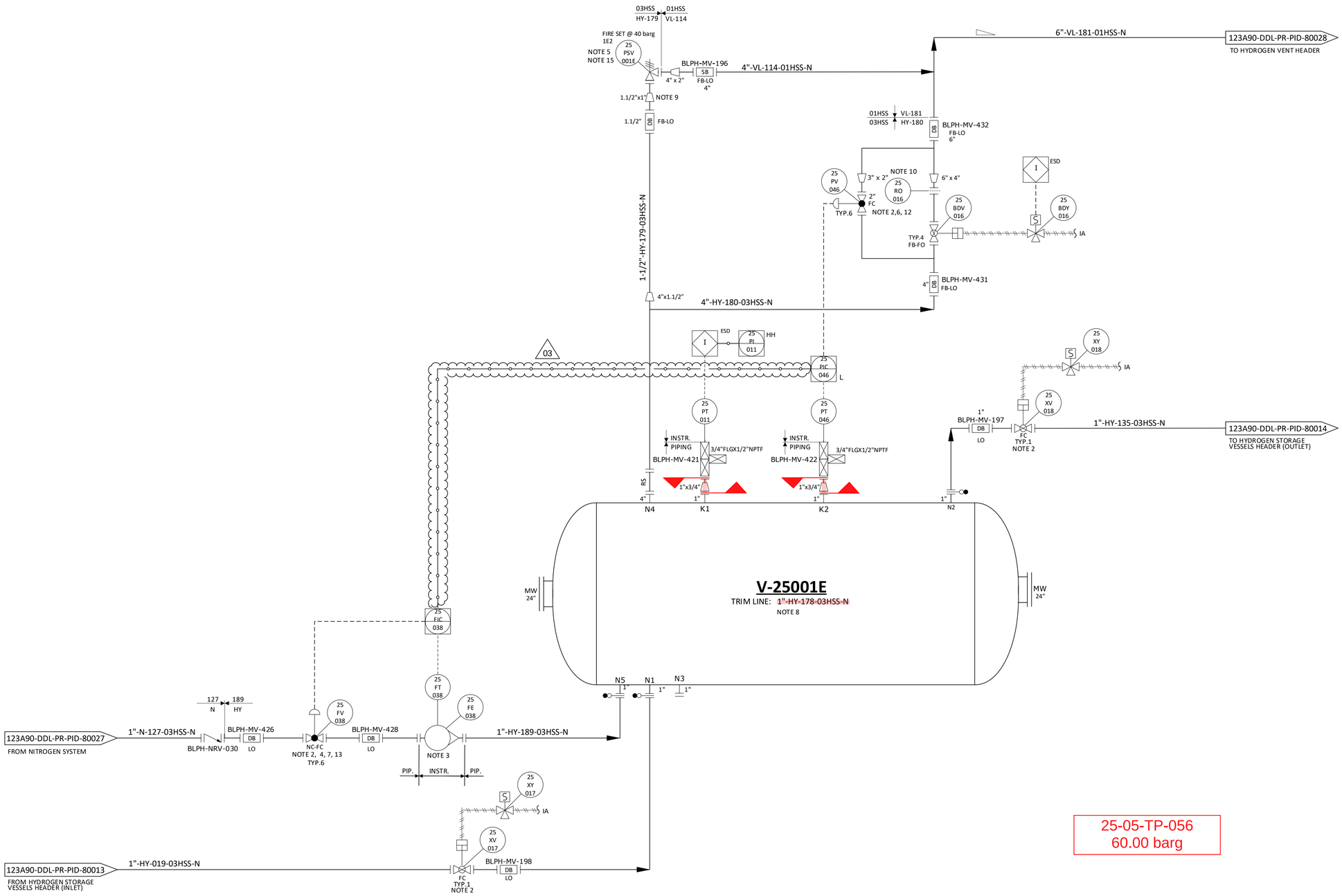
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



25-05-TP-056
60.00 barg

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

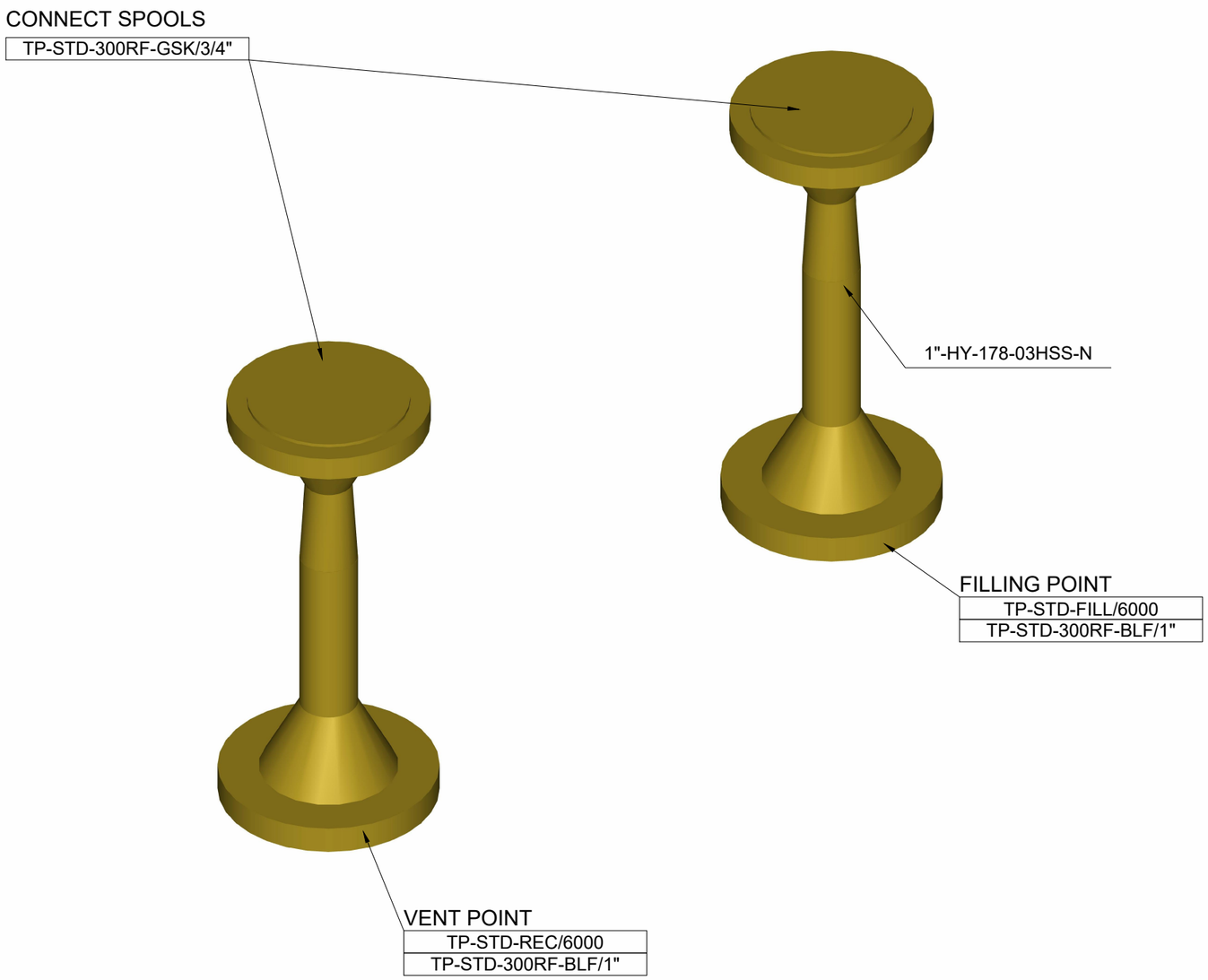
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80019	001	03

File Name = FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



25-05-TP-056

60 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
25-05-TP-056

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

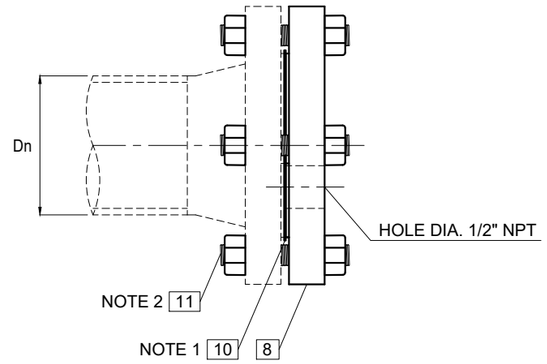
CROSSWIND / ROSETTI MARINO	CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
	PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
	TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-056	TP-STD-300RF-BLF/1"	FLBHCS0018010H	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1	2	2	
TP-056	TP-STD-300RF-BLF/1"	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ø1" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	2	2	
TP-056	TP-STD-300RF-BLF/1"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	
TP-056	TP-STD-300RF-GSK/3/4"	GSW0GK11203Q00	Gasket Spiral Wound Thk. 3.2 mm ø3/4" 300LB RF AISI 316 + GRAPHITE c/w INNER RING	1	1	1	
TP-056	TP-STD-300RF-GSK/3/4"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	

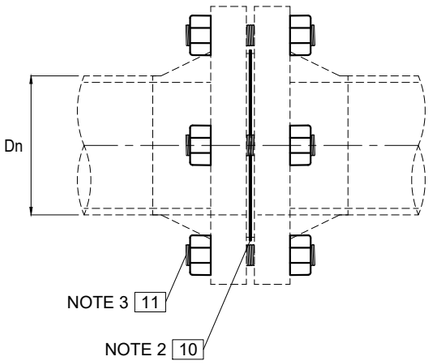
TP-STD-300RF | 300 RF | STANDARD FOR BLIND POINT

TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

MATERIAL LIST			
STD	**POS.**	**DESCRIPTION**	**Q.TY**
TP-STD-300RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-300RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=75 MM	4
TP-STD-300RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=80 MM	4
TP-STD-300RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-300RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=95 MM	4
TP-STD-300RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-300RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-300RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-300RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=115 MM	8
TP-STD-300RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=125 MM	12
TP-STD-300RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=145 MM	12
TP-STD-300RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=160 MM	16
TP-STD-300RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=175 MM	16
TP-STD-300RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=180 MM	20
TP-STD-300RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=195 MM	20
TP-STD-300RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=200 MM	24
TP-STD-300RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=210 MM	24
TP-STD-300RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 300LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 300LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/2" L=235 MM	24



TP-STD-300RF-BLF/Dn
BLIND FLANGE



TP-STD-300RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

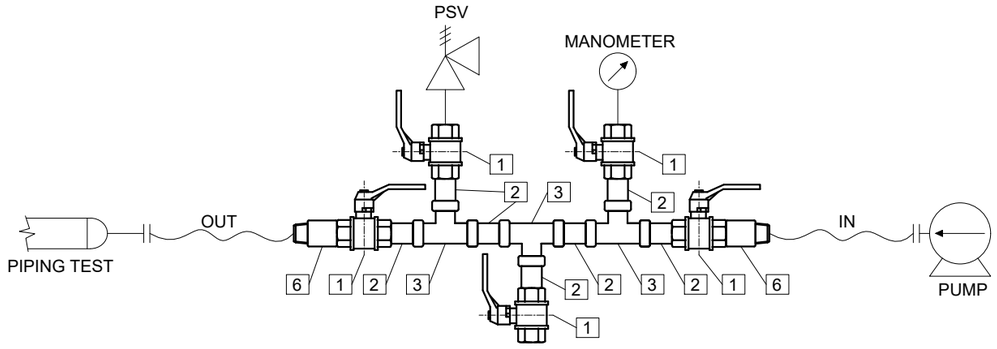
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-300RF
TP-STD-300RF-BLF/Dn
TP-STD-300RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_300RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

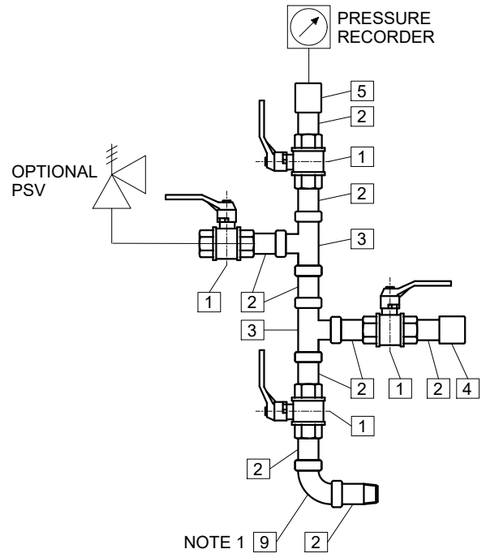
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
82	HY-178	178	1	03HSS	N	3,38	40S	N/A	1"-HY-178-03HSS-N	123A90-DDL-PR-PID-80019	40,00	25	25-05	TP-056	Water	60.00	Hydrogen	Stainless Steel	TL	II	6A	RAL 9002

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

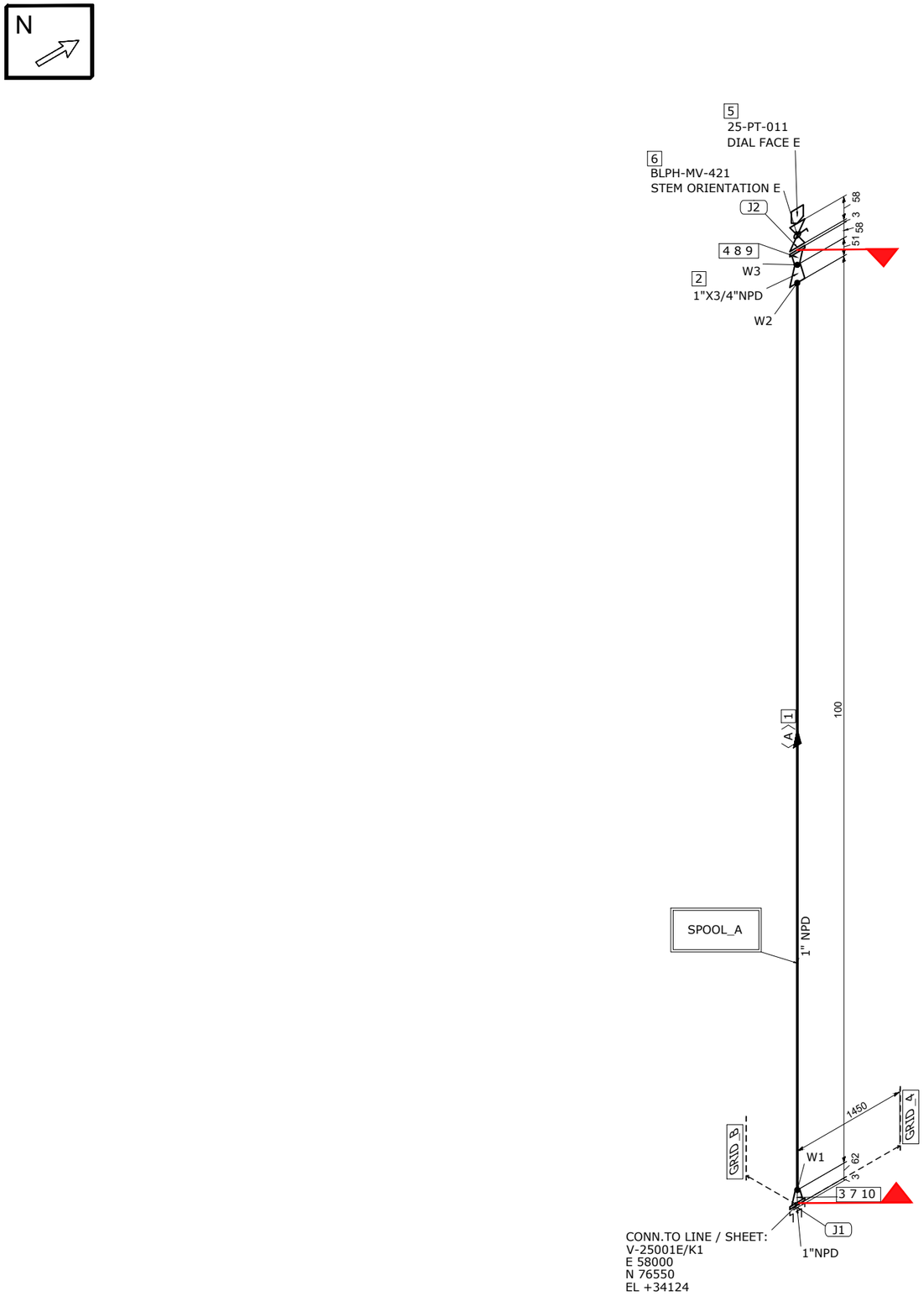
REV. **05**

TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
111	123A90-FDL-PP-DI-00082-01	**082**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-HY-178-03HSS-N	27/08/2024													**00**	**03**		**TP-056**
112	123A90-FDL-PP-DI-00082-02	**082**	02	SHOP DRAWING ISOMETRIC - LINE NR 1"-HY-178-03HSS-N	27/08/2024													**00**	**03**		**TP-056**



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	0.1M	0.3
2	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	3/4	FLW0SS01033Q00	Flange WN ASME B16.5 300LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter - Online	1	0.0
6	3/4X1/2	VLBMNN00013Q0H	Monoflange Double Block & Bleed Valve API 6D FLG x THRD-F NPT 300LB RF MD03C02YH	1	5.8
7	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
8	3/4	GSW0GK11203Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO07540300	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO00670300	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.9

FABRICATION WEIGHT [kg]	3.6
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	11.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2.75	3.6
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-178-03HSS-N

SK.082

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00082 | SHEET / OF: 1/2 | REV.: 00

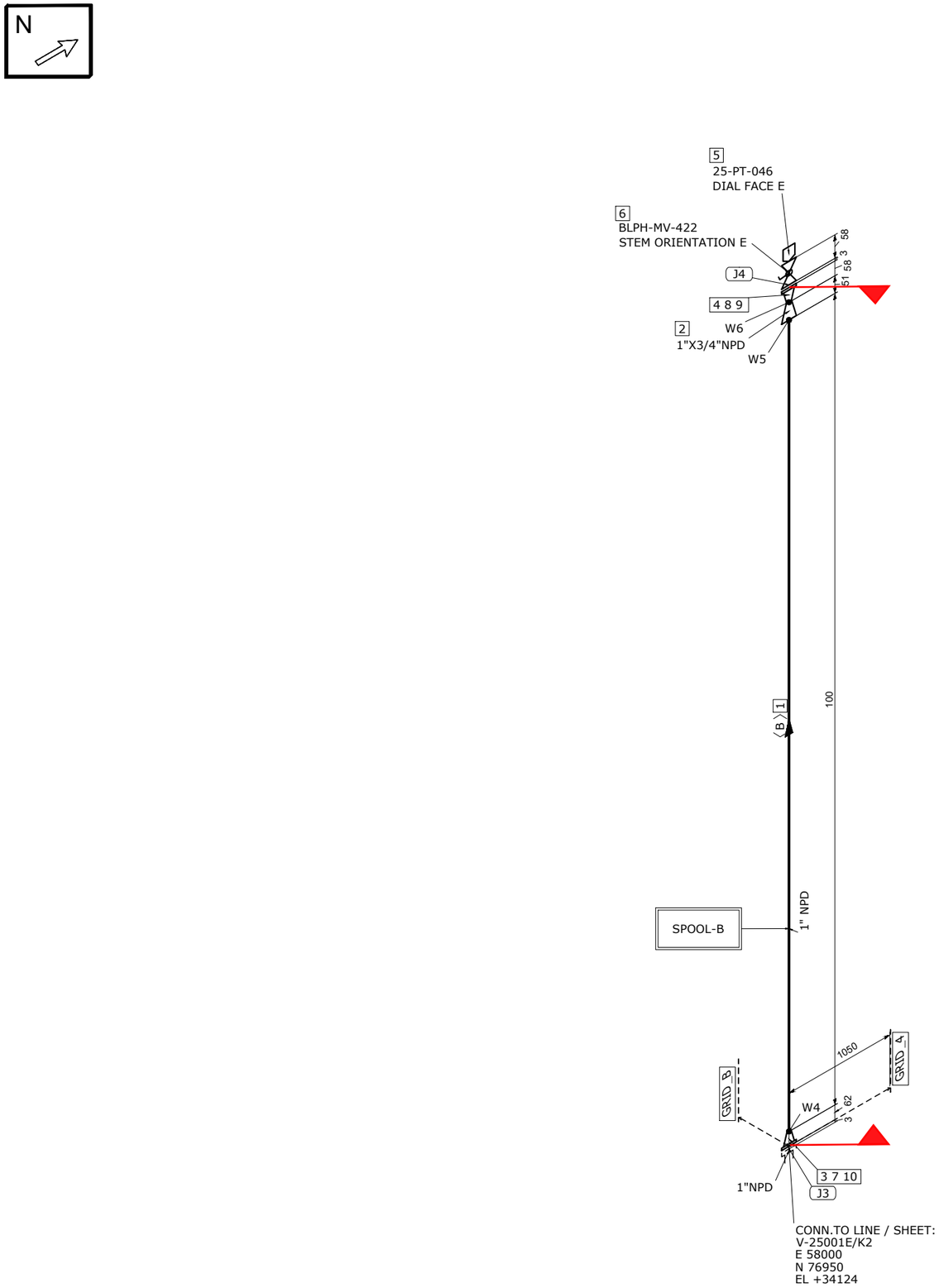
25-05-TP-056

MASTER

LINE DATA								
NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	0.1M	0.3
2	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	3/4	FLW0SS01033Q00	Flange WN ASME B16.5 300LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter - Online	1	0.0
6	3/4X1/2	VLBMNN00013Q0H	Monoflange Double Block & Bleed Valve API 6D FLG x THRD-F NPT 300LB RF MD03C02YH	1	5.8
7	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
8	3/4	GSW0GK11203Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO07540300	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO00670300	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.9

FABRICATION WEIGHT [kg]	3.6
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	11.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W4	1	BW
W5	1	BW
W6	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
B	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
B	2.75	3.6
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-178-03HSS-N

SK.082

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	27-08-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00082	SHEET / OF	2/2
REV.	00				

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

25-05-TP-056

MASTER

6. EXTRACT OF SUPPORT LIST & DETAILS

NOT APPLICABLE

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	82	**To**	82
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/82/1/_		**01**	**03-10-2024**	**28**	**AZ39**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**12-10-2024**	**A**
03HSS	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000326	4	Acceptable				12-10-2024				
2/82/1/_		**01**	**03-10-2024**	**28**	**AZ39**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**12-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000327	4	Acceptable				12-10-2024				
3/82/1/_		**01**	**03-10-2024**	**28**	**AZ39**			**RED**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**12-10-2024**	**A**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				07-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000328	4	Acceptable				12-10-2024				
4/82/2/_		**01**	**30-09-2024**	**21**	**AZ53**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**06-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				02-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000159	4	Acceptable				06-10-2024				
5/82/2/_		**01**	**30-09-2024**	**21**	**AZ53**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**06-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				02-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000160	4	Acceptable				06-10-2024				
6/82/2/_		**01**	**30-09-2024**	**21**	**AZ53**			**RED**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.S.**	**C1A**	**GTAW**	**BW**	**06-10-2024**	**B**
	1	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				02-10-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	100 %	000167	4	Acceptable				06-10-2024				

Totals per DWG	**82**	**Prefabrication**	**0,56 m**	**6 Nr. Welds**	**5,50 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,56 m**	**6 Nr. Welds**	**5,50 inch**
		Accepted	**0,56 m**	**6 Nr. Welds**	**5,50 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,56 m**	**6 Nr. Welds**	**5,50 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,56 m**	**6 Nr. Welds**	**5,50 inch**
		Accepted	**0,56 m**	**6 Nr. Welds**	**5,50 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05

ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
6/82/2/_		01	30-09-2024	21	AZ53		RED	0,75 in	2,87 mm	V	0,083 m	P	S.S.	C1A	GTAW	BW	06-10-2024	B

Totals by Project			
Prefabrication	0,56 m	6 Nr. Welds	5,50 inch
Erection	0,00 m	0 Nr. Welds	0,00 inch
Offshore	0,00 m	0 Nr. Welds	0,00 inch
Performed	0,56 m	6 Nr. Welds	5,50 inch
Accepted	0,56 m	6 Nr. Welds	5,50 inch
Repaired	0,00 m	0 Nr. Welds	0,00 inch

CROSSWIND ROSETTI MARINO	Cliente/Contractor	CROSSWIND	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by								
	SubContrattista/SubContractor	ROSETTIMARINO/GROUPOFCOMPANY	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:								
	Progetto/Project	Hollandse Kust Noord Wind Park Project											
	Commessa/Job	123A90 - Piping											
	Disciplina/Discipline	PIPING											
	TitoloDocumento/DocumentTitle	Material Traceability Report	StatoDocumento/Document Status:		Data/Date: 29/11/2024								
	RosettiDoc.Num.	123A90MTR001											

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
82	00	1	A	03HSS	2	1	Reducer Concentric BW ›1"x3/4" Thk.3.38mmx2.87mm ASTM A403 Gr.WP316/316L	MR230609	1724001267	00320	MCP2401-00015-16	W2-W3	
82	00	1	A	03HSS	3	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DJ346	1724000839	01010	12/230039622/57/REV-00	W1	
82	00	1	A	03HSS	4	1	Flange WN ›3/4" Thk.2.87mm 300LB RF ASTM A182 Gr.F316/316L	A-5735	1724000839	00990	GLECO/J-1391-18	W4	
82	00	1	A	03HSS	1A	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		
82	00	2	B	03HSS	2	1	Reducer Concentric BW ›1"x3/4" Thk.3.38mmx2.87mm ASTM A403 Gr.WP316/316L	MR230609	1724001267	00320	MCP2401-00015-16	W5-W6	
82	00	2	B	03HSS	3	1	Flange WN ›1" Thk.3.38mm 300LB RF ASTM A182 Gr.F316/316L	DJ346	1724000839	01010	12/230039622/57/REV-00	W4	
82	00	2	B	03HSS	4	1	Flange WN ›3/4" Thk.2.87mm 300LB RF ASTM A182 Gr.F316/316L	A-5735	1724000839	00990	GLECO/J-1391-18	W6	
82	00	2	B	03HSS	1B	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A312 Gr.TP316/316L	235689	1724000839	00050	WSSL/SP-316L/0923/1223		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation – NOT APPLICABLE

8.4 CXX02 – Painting Line

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	25-05-TP-056	: Test Pack 25-05-TP-056			Dwg	123A90-DDL-PR-PID-80019
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003652		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

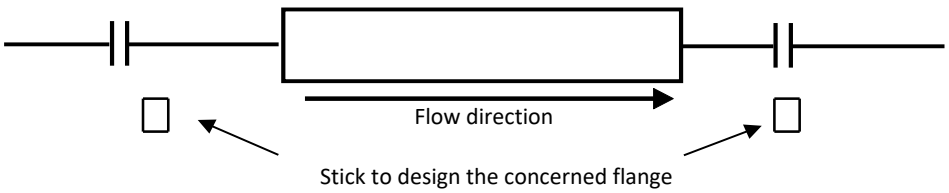
1	Drying out method :	Drying with dry air.
2	Operation description :	Dry the system using a flow of dry air, ensuring all drains are open to facilitate the removal of moisture. The drying process shall be monitored closely to ensure complete moisture removal. After drying, isolate and close the inlet and outlet points.
3	Temporary means :	Cups to isolate inlet and outlet points.
4	Dew point (obtain after soaking and nitrogen purging):	Measured temperature -40 C° on the compressor side and -20 C° on the vent side.
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Delimit the test area.
11	REMARKS:	

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	rodeo	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2024-12-02	2024-12-06	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2024-12-02T14:16:06.572Z	PROVERLIS Digitaly signed by Massimo Bruschi 2024-12-06T16:49:02.312Z	

ITEM	Tag	013-1-J4	: Joint 013-1-J4		Dwg	123A90-FDL-PP-DI-00013-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD/LD	
TASK	code	C10003859	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX27	Bolt tensioning / torquing

Test Pack N.: TP-012

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	48	160	48	95	158.8
2	48	160	48	95	158.8
3	48	160	48	95	158.8
4	48	160	48	95	158.8
5			48	95	158.8
6			48	95	158.8
7			48	95	158.8
8			48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

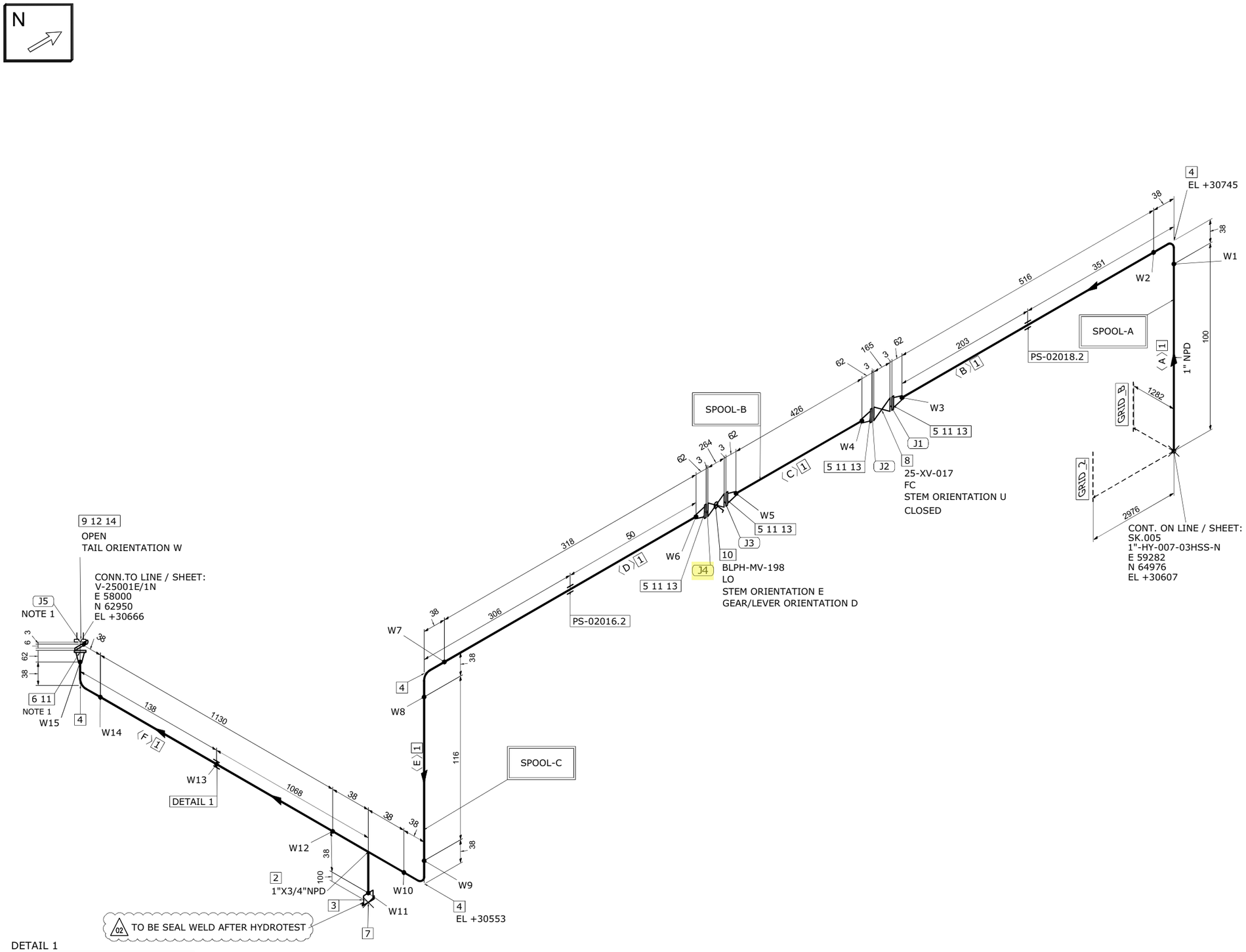
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

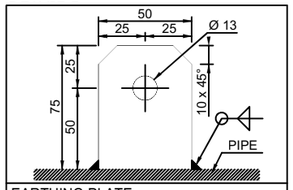
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-24	2025-01-24	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-24T07:10:17.970Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-24T09:06:23.362Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	2.6M	6.6
2	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	1	0.2
4	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	4	0.6
5	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	4	7.3
6	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	1	0.2
8	1		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	41.0
9	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
10	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	13.5
11	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	5	0.4
12	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
13	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	3.7
14	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	16.8
ERECTION WEIGHT [kg]	60.4
OVERALL WEIGHT [kg]	76.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	3/4	BW
W12	1	BW
W13		FW
W14	1	BW
W15	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL
B	1	516	BEVEL	BEVEL
C	1	426	BEVEL	BEVEL
D	1	318	BEVEL	BEVEL
E	1	116	BEVEL	BEVEL
F	1	1130	BEVEL	BEVEL

SUPPORT LIST

PS-02018.2
PS-02016.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	3	3.5
B	2	4.7
C	8.75	8.5
MONT	0	60.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-019-03HSS-N
SK.013

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00013 | SHEET / OF: 1/1 | REV.: 02

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002		FLUID PHASE	GAS				
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	--			TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

TAG 013-1-JL

FLANGE TIGHTENED

ID STAMP RFH 2/6

SIGNED

DATE 23/01/25

RETURN TO SUPERVISOR

TAG 013-1-JL

FLANGE ASSEMBLED

ID STAMP RFH 2/6

SIGNED

DATE 23/1/25

RETURN TO SUPERVISOR

TAG 013-1-JL

FLANGE BROKEN

ID STAMP

SIGNED

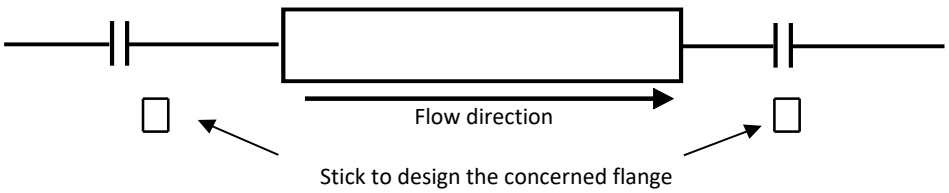
DATE

RETURN TO SUPERVISOR

ITEM	Tag	013-1-J5	: Joint 013-1-J5			Dwg	123A90-FDL-PP-DI-00013-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD/LD
TASK	code	C10003860		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-012

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	120		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

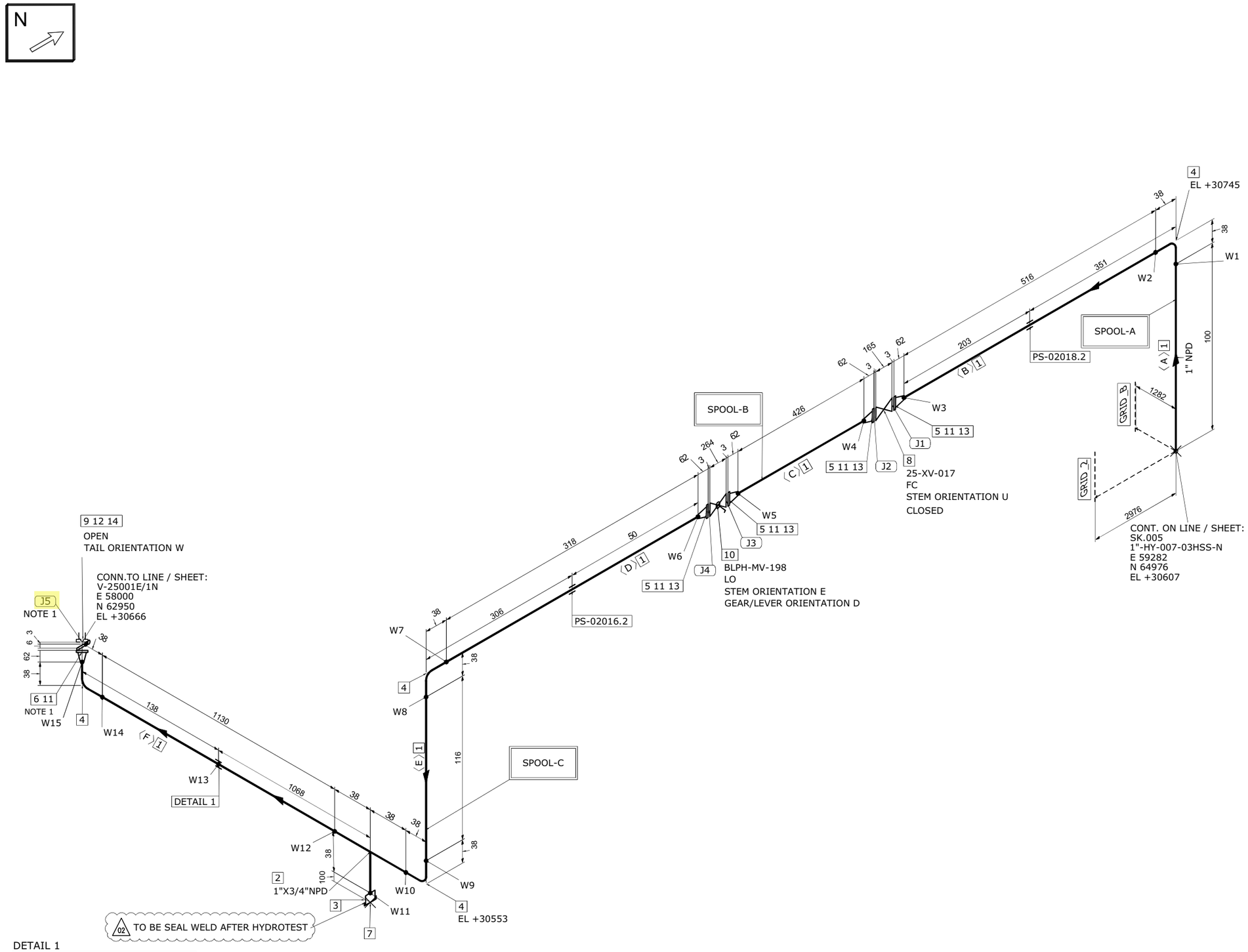
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-24	2025-01-24	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-24T07:10:32.786Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-24T09:07:11.993Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	2.6M	6.6
2	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	1	0.2
4	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	4	0.6
5	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	4	7.3
6	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
7	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	1	0.2
8	1		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	41.0
9	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
10	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	13.5
11	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	5	0.4
12	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
13	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	3.7
14	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	16.8
ERECTION WEIGHT [kg]	60.4
OVERALL WEIGHT [kg]	76.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	3/4	BW
W12	1	BW
W13		FW
W14	1	BW
W15	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL
B	1	516	BEVEL	BEVEL
C	1	426	BEVEL	BEVEL
D	1	318	BEVEL	BEVEL
E	1	116	BEVEL	BEVEL
F	1	1130	BEVEL	BEVEL

SUPPORT LIST

PS-02018.2
PS-02016.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	3	3.5
B	2	4.7
C	8.75	8.5
MONT	0	60.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-019-03HSS-N
SK.013

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00013 | SHEET / OF: 1/1 | REV.: 02

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002		FLUID PHASE	GAS				
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	--			TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

TAG 013-1-J5

FLANGE TIGHTENED

ID STAMP RFN 2/6

SIGNED

DATE 23/01/25

RETURN TO SUPERVISOR

TAG 013-1-J5

FLANGE ASSEMBLED

ID STAMP RFN 2/6

SIGNED

DATE 23/01/25

RETURN TO SUPERVISOR

TAG 013-1-J5

FLANGE BROKEN

ID STAMP

SIGNED

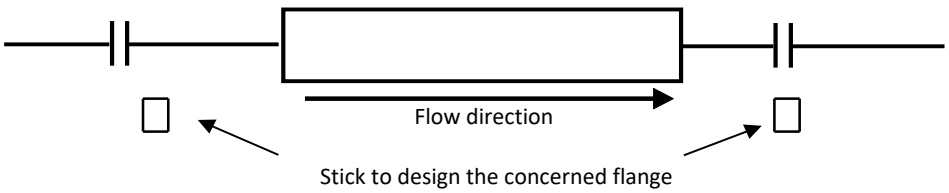
DATE

RETURN TO SUPERVISOR

ITEM	Tag	053-1-J1	: Joint 053-1-J1			Dwg	123A90-FDL-PP-DI-00053-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003889		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-036

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	120		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

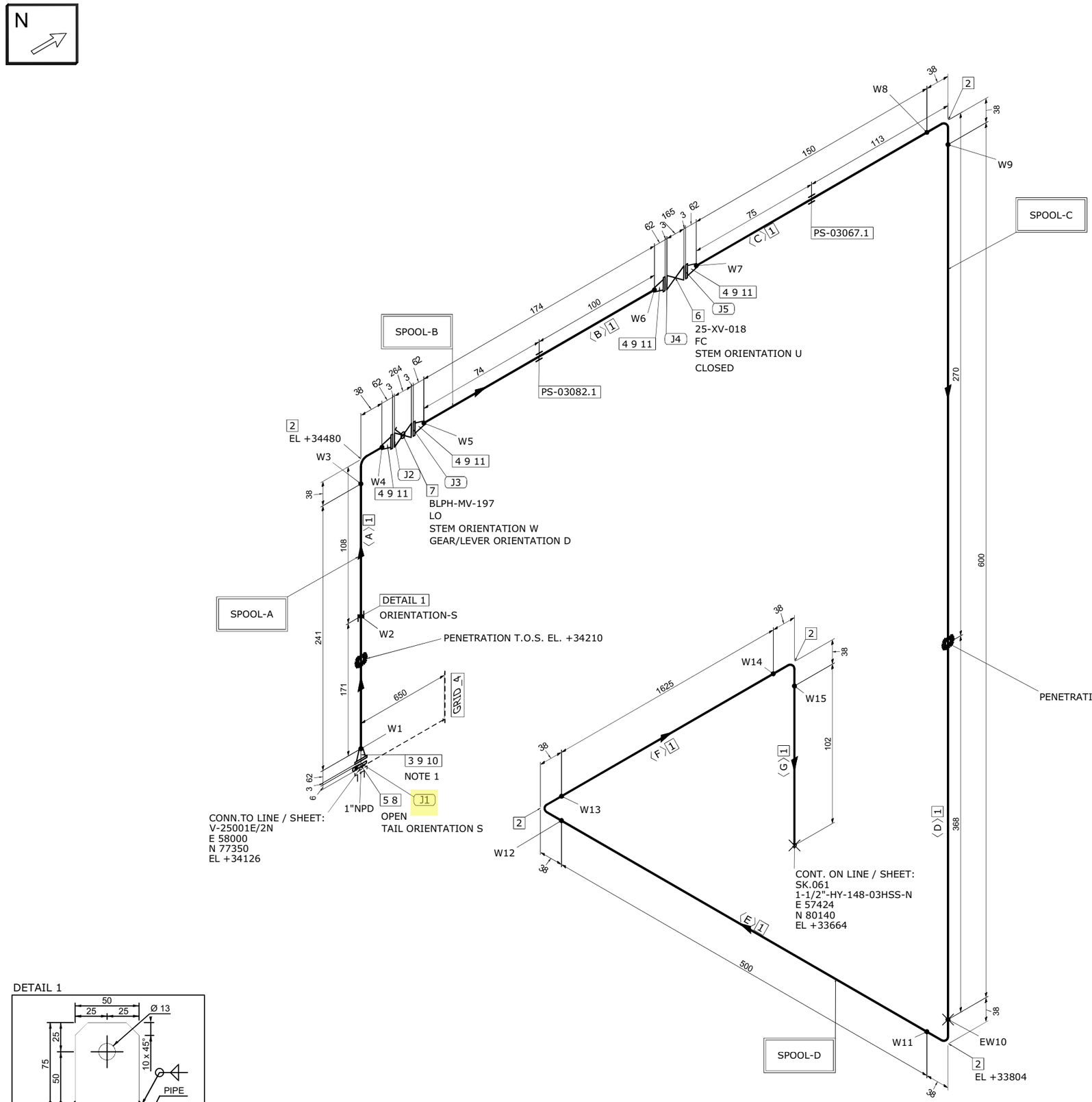
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

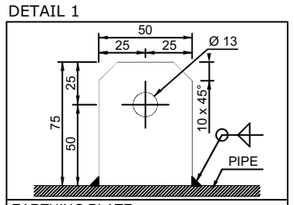
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-12	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:45:29.010Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-12T09:11:00.020Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.4M	8.6
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
3	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	4	7.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
6	1		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	41.0
7	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	13.5
8	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
9	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	5	0.4
10	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	3.7

FABRICATION WEIGHT [kg]	18.4
ERECTION WEIGHT [kg]	60.2
OVERALL WEIGHT [kg]	78.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2		FW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
EW10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	241	BEVEL	BEVEL
B	1	174	BEVEL	BEVEL
C	1	150	BEVEL	BEVEL
D	1	600	BEVEL	BEVEL
E	1	500	BEVEL	BEVEL
F	1	1625	BEVEL	BEVEL
G	1	102	BEVEL	BEVEL

SUPPORT LIST

PS-03082.1
PS-03067.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	3	4.4
B	2	4.1
C	3	3.9
D	5	6.1
MONT	1	60.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-135-03HSS-N

SK.053

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00053 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40	01 [barg]	TEMP. -29 / 80	[°C]	
HEAT TRACING	--		TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water	

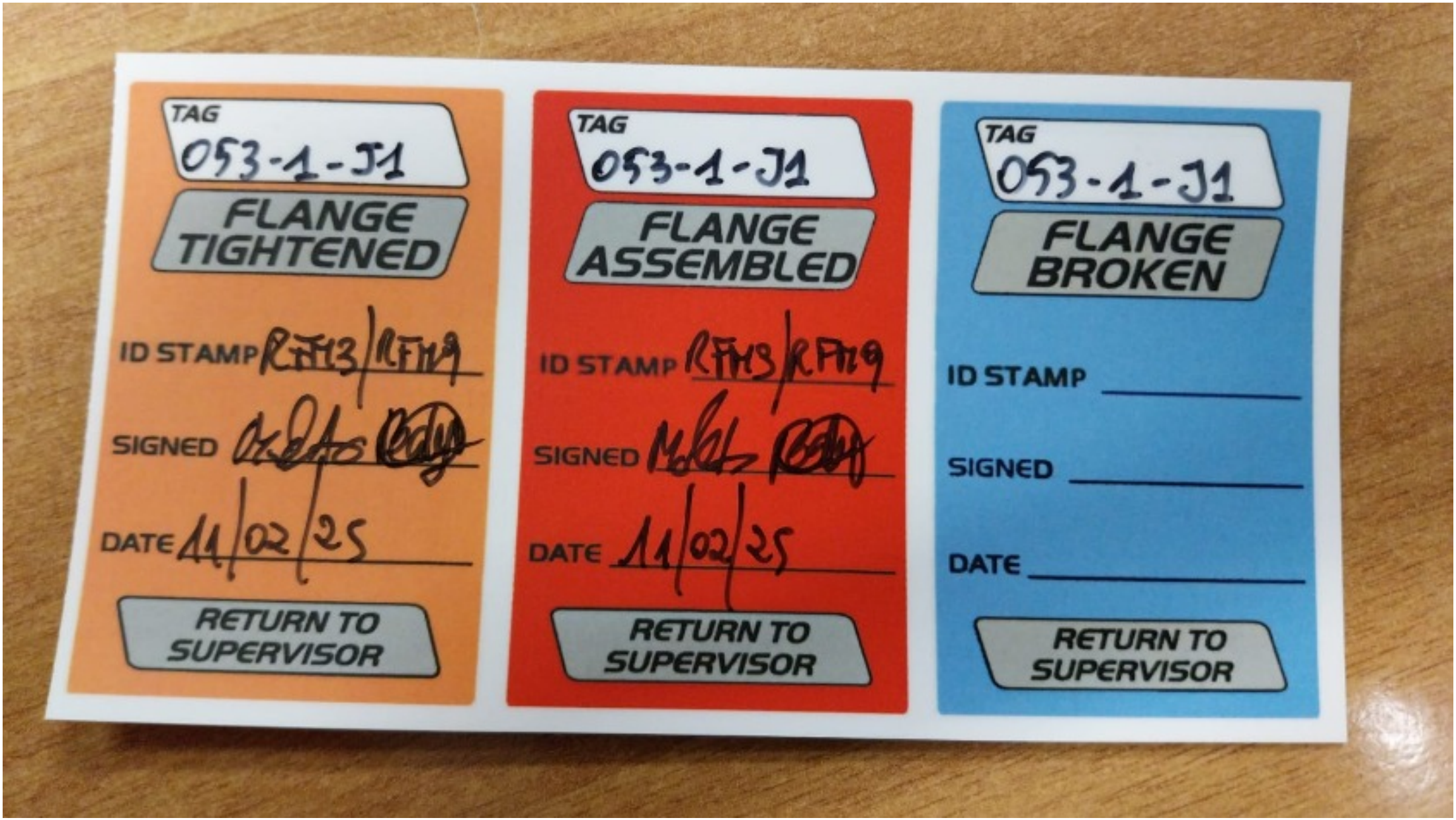
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION E/W

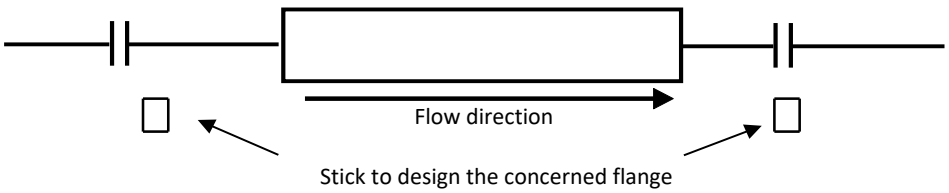
MASTER


TAG
053-1-J1
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 11/02/25
RETURN TO SUPERVISOR
TAG
053-1-J1
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 11/02/25
RETURN TO SUPERVISOR
TAG
053-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	053-1-J2	: Joint 053-1-J2			Dwg	123A90-FDL-PP-DI-00053-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003890	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-036

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	48	160	48	95	158.8
2	48	160	48	95	158.8
3	48	160	48	95	158.8
4	48	160	48	95	158.8
5			48	95	158.8
6			48	95	158.8
7			48	95	158.8
8			48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

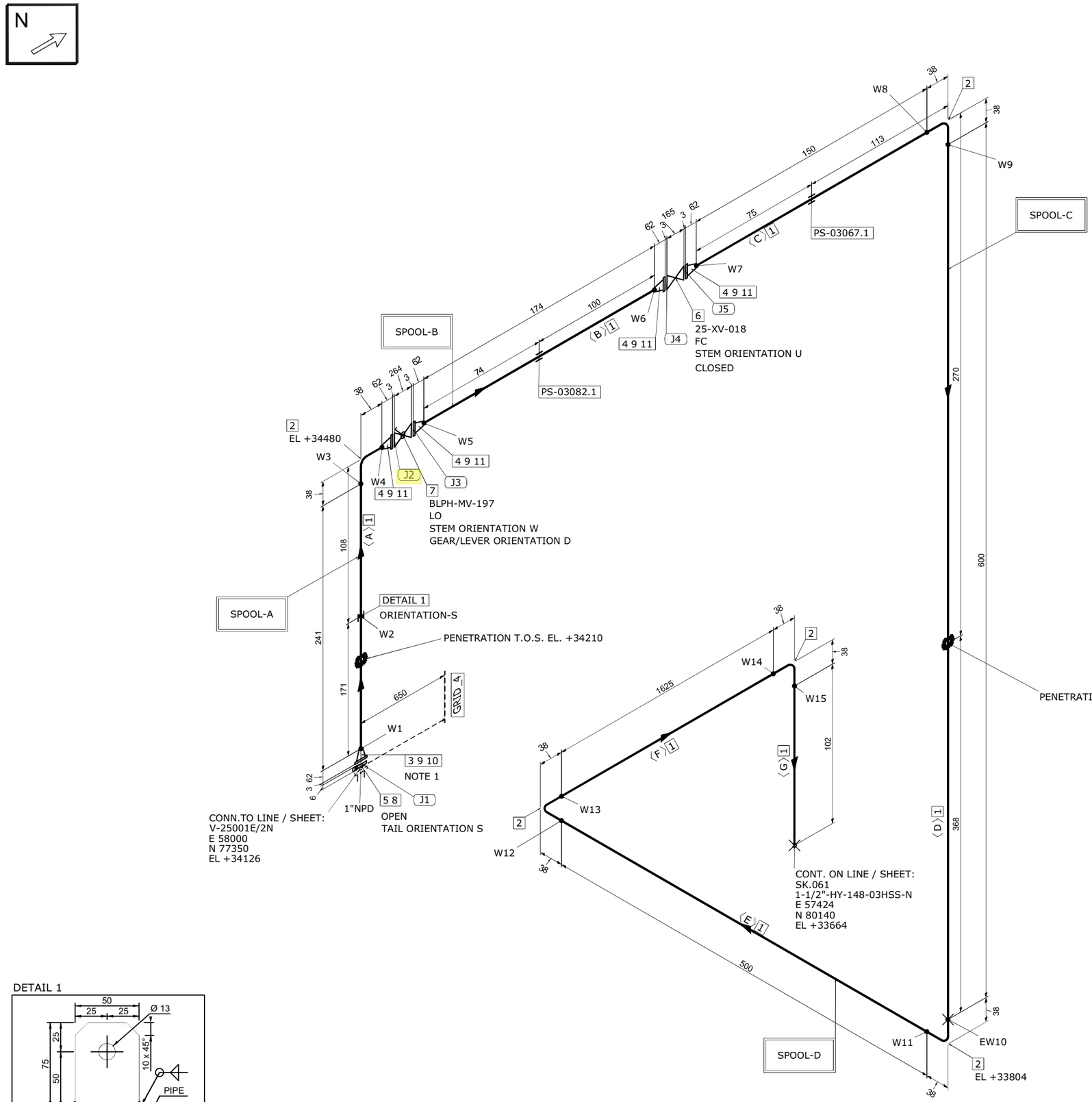
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

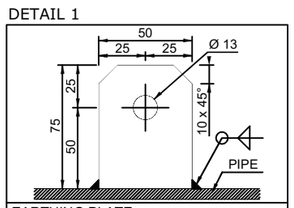
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-12	
Signature	Digitaly signed by Emanuele Delfino 2025-02-05T05:45:40.002Z	Digitaly signed by Massimo Bruschi 2025-02-12T09:10:51.725Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.4M	8.6
2	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
3	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	4	7.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
6	1		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	41.0
7	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	13.5
8	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
9	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	5	0.4
10	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
11	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	3.7

FABRICATION WEIGHT [kg]	18.4
ERECTION WEIGHT [kg]	60.2
OVERALL WEIGHT [kg]	78.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2		FW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
EW10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	241	BEVEL	BEVEL
B	1	174	BEVEL	BEVEL
C	1	150	BEVEL	BEVEL
D	1	600	BEVEL	BEVEL
E	1	500	BEVEL	BEVEL
F	1	1625	BEVEL	BEVEL
G	1	102	BEVEL	BEVEL

SUPPORT LIST

PS-03082.1
PS-03067.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	3	4.4
B	2	4.1
C	3	3.9
D	5	6.1
MONT	1	60.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-135-03HSS-N

SK.053

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 03-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00053 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40	[barg]	TEMP. -29 / 80	[°C]
HEAT TRACING	--		TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water

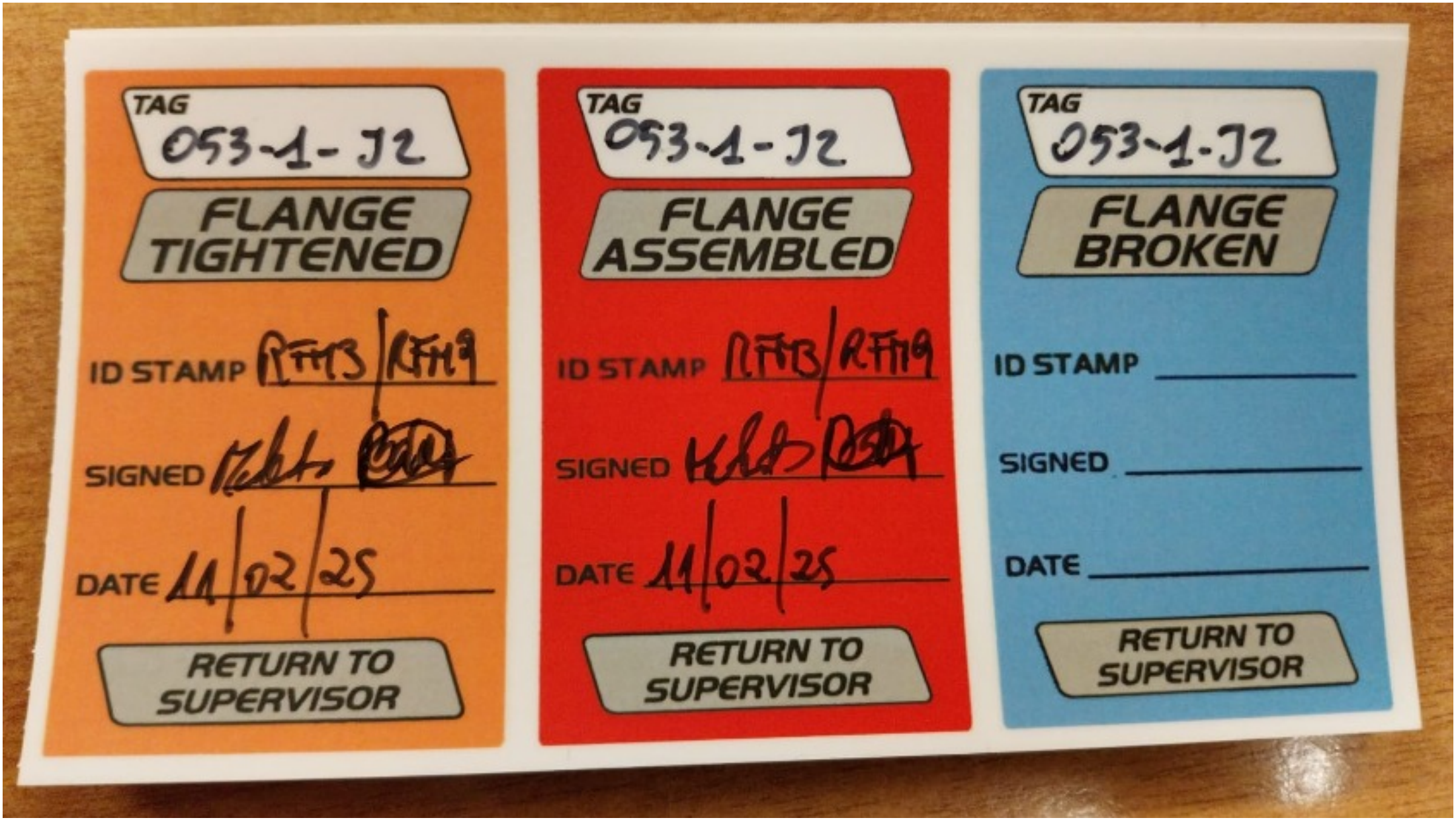
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION E/W

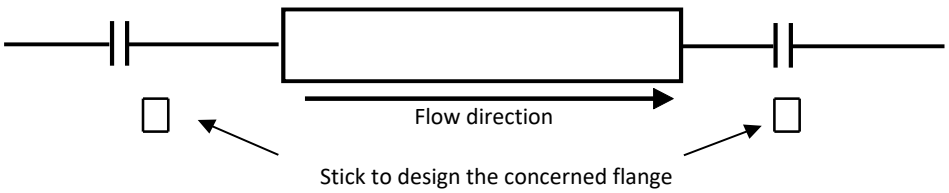
MASTER


TAG
053-1-J2
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 11/02/25
RETURN TO SUPERVISOR
TAG
053-1-J2
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 11/02/25
RETURN TO SUPERVISOR
TAG
053-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	083-1-J1	: Joint 083-1-J1			Dwg	123A90-FDL-PP-DI-00083-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003984		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



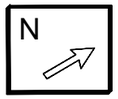
Flange Type	300LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

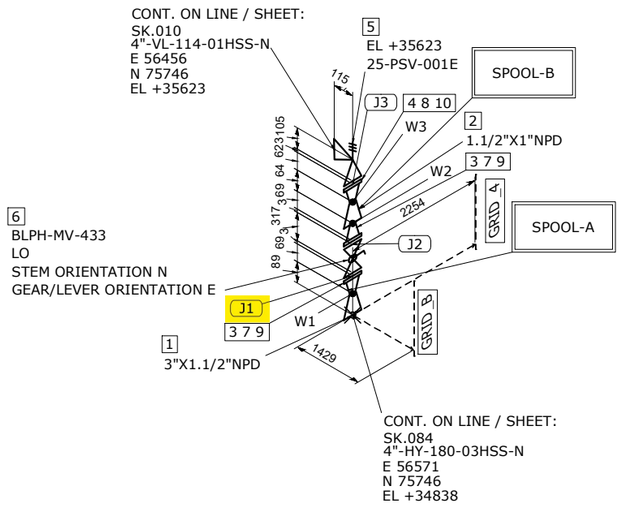
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	82	275	82	165	274.4
2	82	275	82	165	274.4
3	82	275	82	165	274.4
4	82	275	82	165	274.4
5			82	165	274.4
6			82	165	274.4
7			82	165	274.4
8			82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:46:15.347Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:31:49.092Z	





MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	3X1.1/2	REC0SS0128031H	Reducer Concentric ASME B16.9 BW 3,05x3,68 WRS ASTM A403 Gr.WP316/316L	1	0.5
2	1.1/2X1	REC0SS03191H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1.1/2	FLW0SS03481H00	Flange WN ASME B16.5 300LB RF 3,68 FRG ASTM A182 Gr.F316/316L	2	6.5
4	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		Pressure Safety Valve FLG.300/150#RF	1	15.0
6	1.1/2	VLBBNN07201H00	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	40.0
7	1.1/2	GSW0GK11221H00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.2
8	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	3/4	SB20BO23540400	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.1
10	5/8	SB20BO00680300	100 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	9.1
ERECTION WEIGHT [kg]	59.4
OVERALL WEIGHT [kg]	68.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL

SPOOL	WELD [inches]	WEIGHT [kg]
A	1.5	3.7
B	2.5	5.3
MONT	0	59.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-HY-179-03HSS-N

SK.083

LINE DATA

NDT INSPECTION CATEGORY	1	PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40	01 [barg]	TEMP. -29 / 80	[°C]
HEAT TRACING	--		TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water

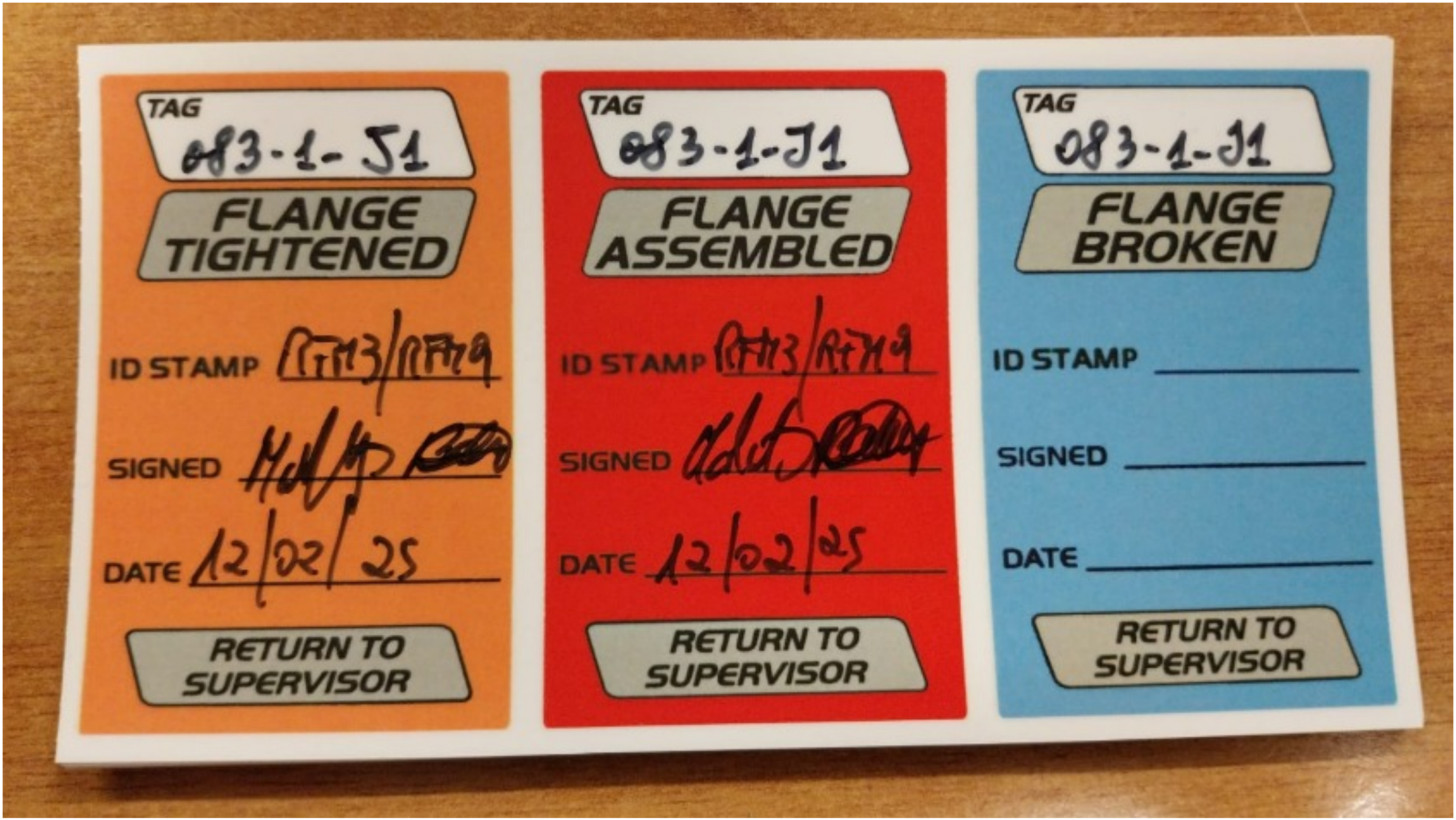
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

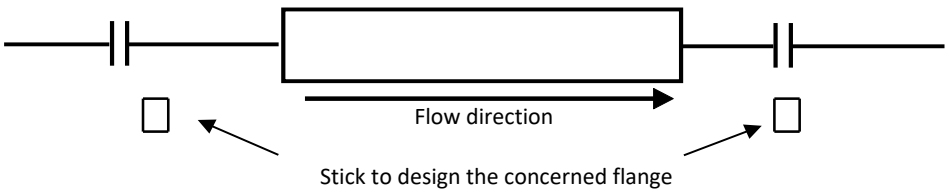
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00083	SHEET / OF 1/1	REV. 01


TAG
083-1-J1
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
083-1-J1
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
083-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	083-1-J2	: Joint 083-1-J2			Dwg	123A90-FDL-PP-DI-00083-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003985		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



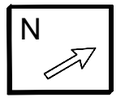
Flange Type	300LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

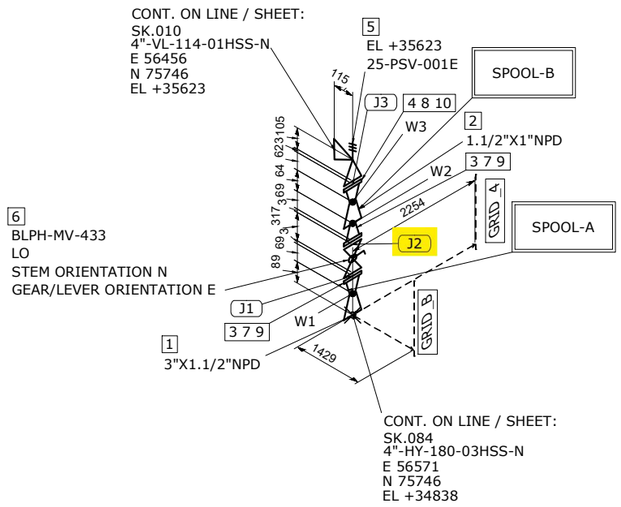
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	82	275	82	165	274.4
2	82	275	82	165	274.4
3	82	275	82	165	274.4
4	82	275	82	165	274.4
5			82	165	274.4
6			82	165	274.4
7			82	165	274.4
8			82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:46:27.209Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:31:42.716Z	





MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	3X1.1/2	REC0SS0128031H	Reducer Concentric ASME B16.9 BW 3,05x3,68 WRS ASTM A403 Gr.WP316/316L	1	0.5
2	1.1/2X1	REC0SS03191H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1.1/2	FLW0SS03481H00	Flange WN ASME B16.5 300LB RF 3,68 FRG ASTM A182 Gr.F316/316L	2	6.5
4	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		Pressure Safety Valve FLG.300/150#RF	1	15.0
6	1.1/2	VLBBNN07201H00	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	40.0
7	1.1/2	GSW0GK11221H00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.2
8	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	3/4	SB20BO23540400	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.1
10	5/8	SB20BO00680300	100 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	9.1
ERECTION WEIGHT [kg]	59.4
OVERALL WEIGHT [kg]	68.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	1.5	3.7
B	2.5	5.3
MONT	0	59.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-HY-179-03HSS-N

SK.083

LINE DATA

NDT INSPECTION CATEGORY	1	PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40	01 [barg]	TEMP. -29 / 80	[°C]
HEAT TRACING	--		TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water

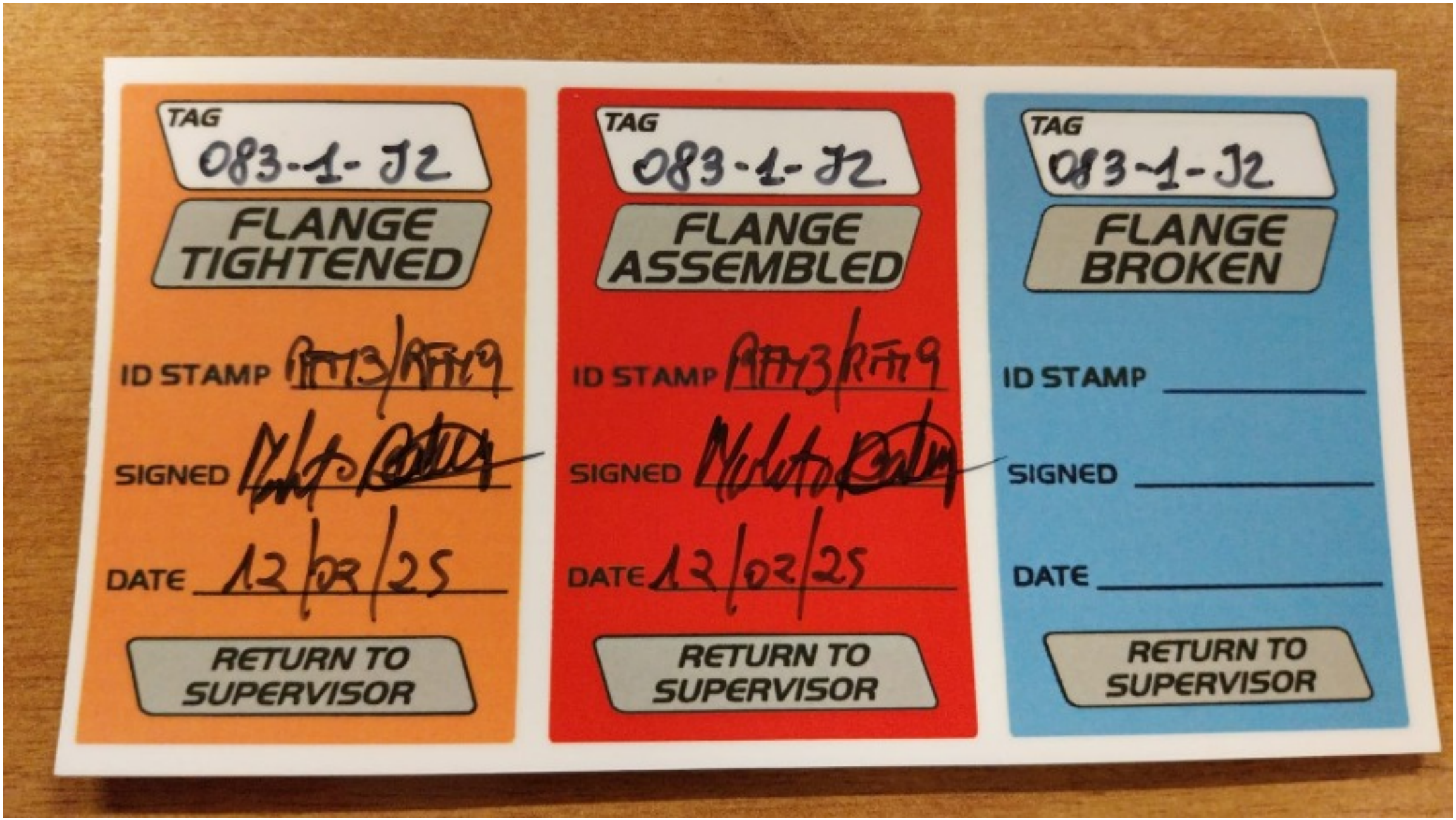
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

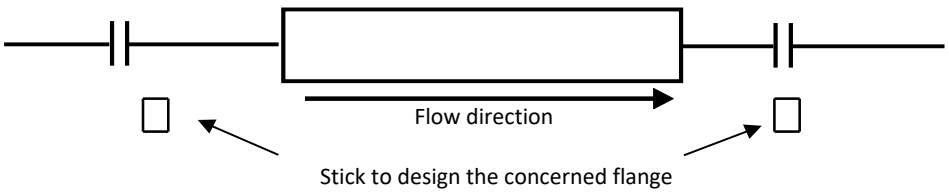
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00083	SHEET / OF 1/1	REV. 01


TAG
083-1-J2
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
083-1-J2
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
083-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	083-1-J3	: Joint 083-1-J3			Dwg	123A90-FDL-PP-DI-00083-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003986		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	82	275	82	165	274.4
2	82	275	82	165	274.4
3	82	275	82	165	274.4
4	82	275	82	165	274.4
5			82	165	274.4
6			82	165	274.4
7			82	165	274.4
8			82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

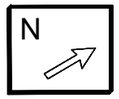
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

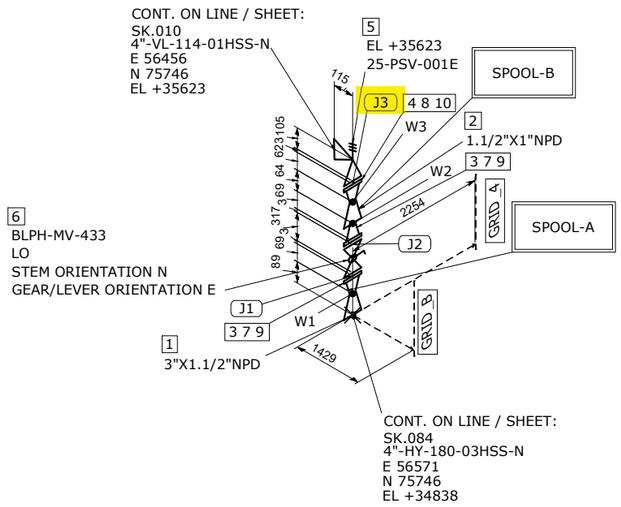
3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:46:45.778Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:31:33.754Z	





MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	3X1.1/2	REC0SS0128031H	Reducer Concentric ASME B16.9 BW 3,05x3,68 WRS ASTM A403 Gr.WP316/316L	1	0.5
2	1.1/2X1	REC0SS03191H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1.1/2	FLW0SS03481H00	Flange WN ASME B16.5 300LB RF 3,68 FRG ASTM A182 Gr.F316/316L	2	6.5
4	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		Pressure Safety Valve FLG.300/150#RF	1	15.0
6	1.1/2	VLBBNN07201H00	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	40.0
7	1.1/2	GSW0GK11221H00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.2
8	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	3/4	SB20BO23540400	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.1
10	5/8	SB20BO00680300	100 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	9.1
ERECTION WEIGHT [kg]	59.4
OVERALL WEIGHT [kg]	68.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	1.5	3.7
B	2.5	5.3
MONT	0	59.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-HY-179-03HSS-N

SK.083

LINE DATA

NDT INSPECTION CATEGORY	1	PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40	01 [barg]	TEMP. -29 / 80	[°C]
HEAT TRACING	--		TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water

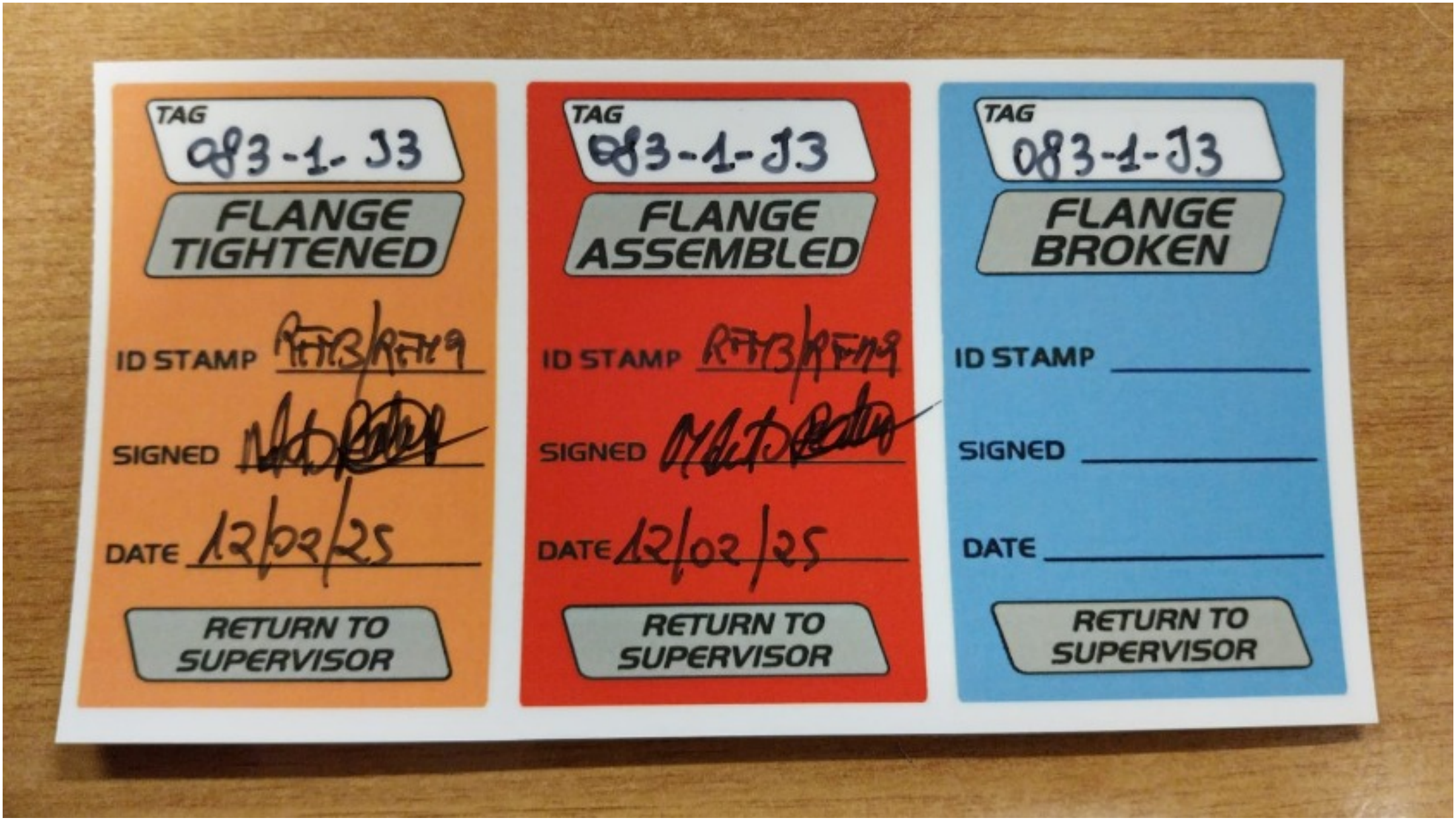
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

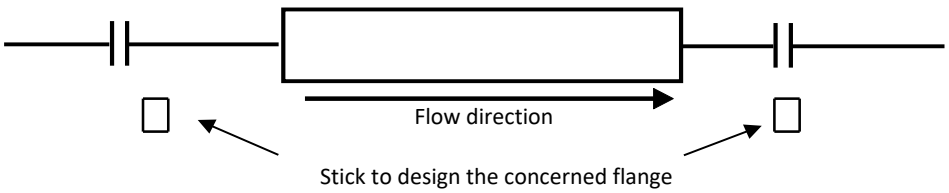
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 03-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00083	SHEET / OF 1/1	REV. 01


TAG
083-1-J3
FLANGE TIGHTENED
ID STAMP RFT3/RFT9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
083-1-J3
FLANGE ASSEMBLED
ID STAMP RFT3/RFT9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
083-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J1	: Joint 084-1-J1			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003987		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	210		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	210	63	126	210
2	63	210	63	126	210
3	63	210	63	126	210
4	63	210	63	126	210
5	63	210	63	126	210
6	63	210	63	126	210
7	63	210	63	126	210
8	63	210	63	126	210
9			63	126	210
10			63	126	210
11			63	126	210
12			63	126	210
13			63	126	210
14			63	126	210
15			63	126	210
16			63	126	210
17			63	126	210
18			63	126	210
19			63	126	210
20			63	126	210

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

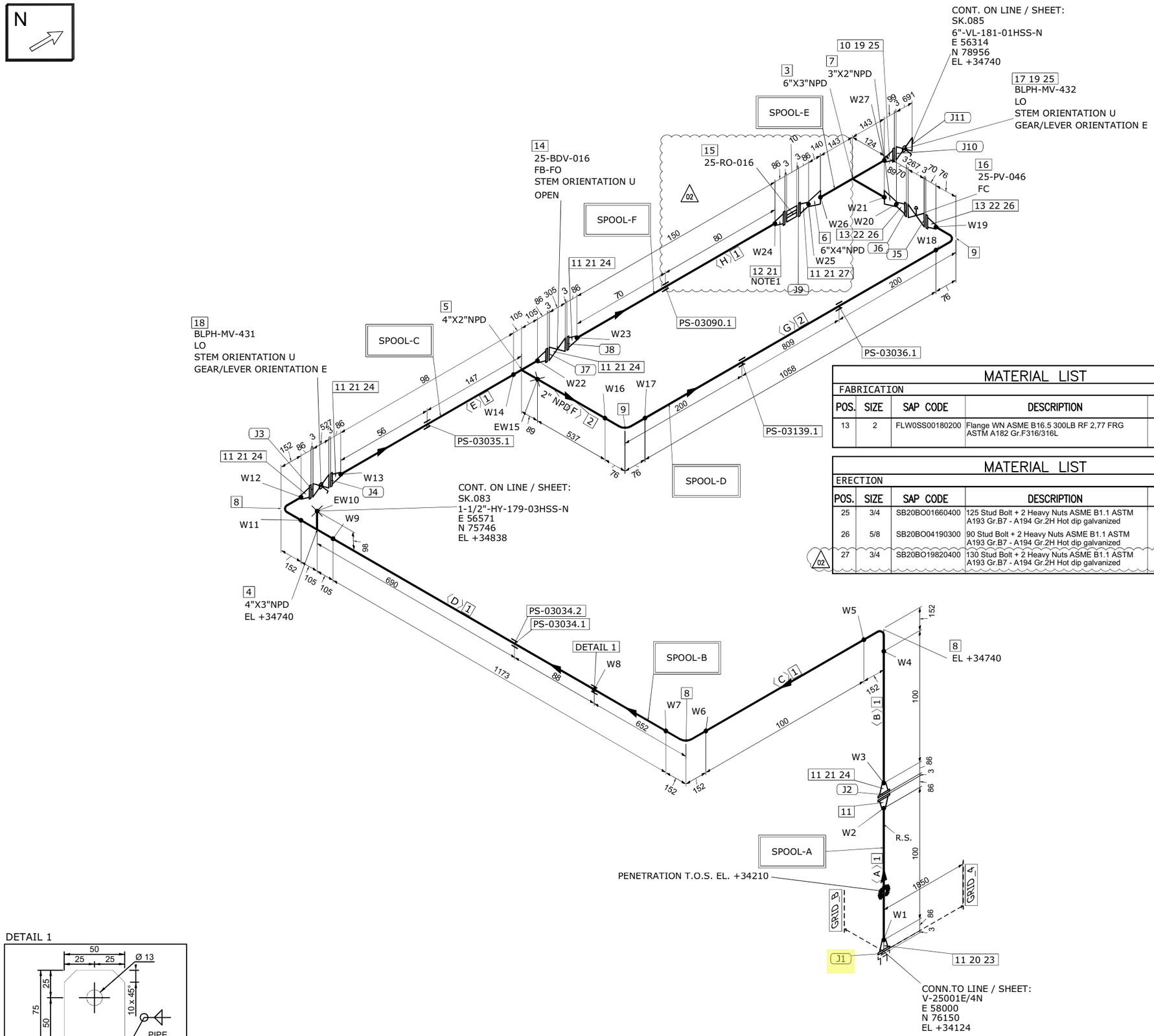
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:46:56.480Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:31:11.837Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

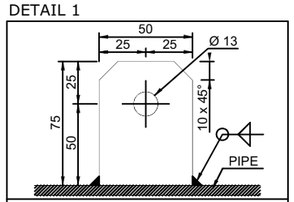
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

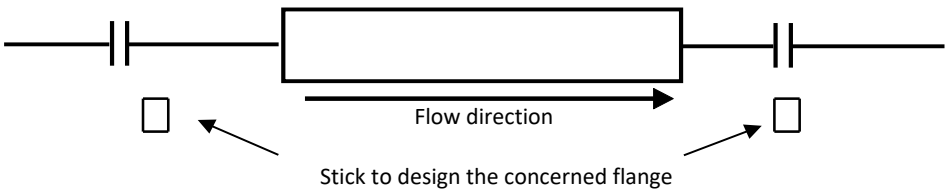
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	17-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00084
SHEET / OF	1/1
REV.	02


TAG
084-1-J1
FLANGE TIGHTENED
ID STAMP RTT3/RFM9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J1
FLANGE ASSEMBLED
ID STAMP RTT3/RFM9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J2	: Joint 084-1-J2			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003988		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	275	82	165	274.4
2	63	275	82	165	274.4
3	63	275	82	165	274.4
4	63	275	82	165	274.4
5	63	275	82	165	274.4
6	63	275	82	165	274.4
7	63	275	82	165	274.4
8	63	275	82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

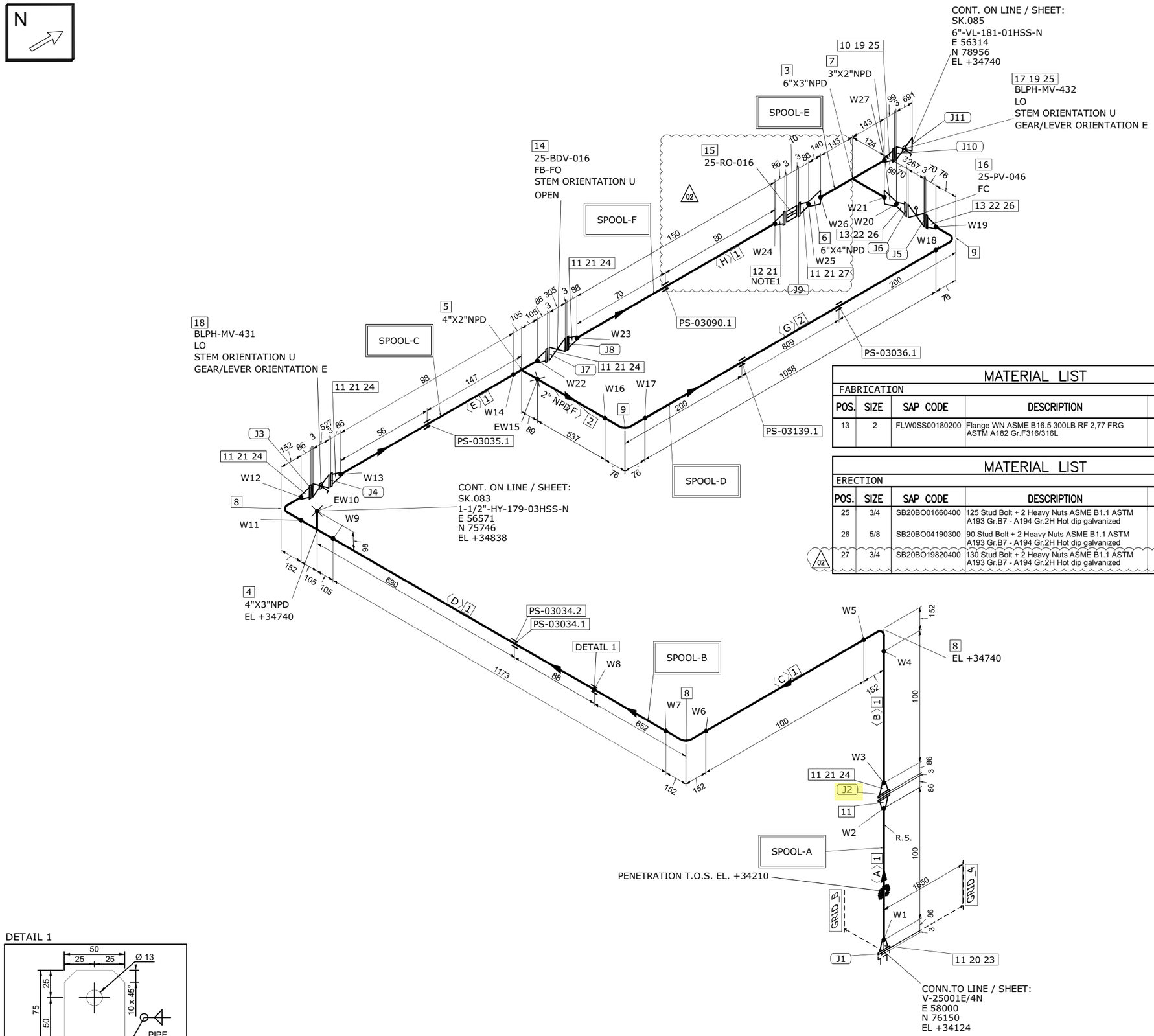
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:47:19.031Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:30:44.823Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

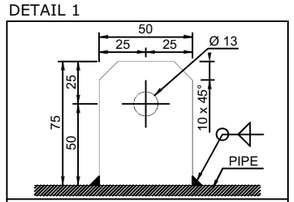
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00084 | SHEET / OF: 1/1 | REV.: 02

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	III				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION E\W

MASTER

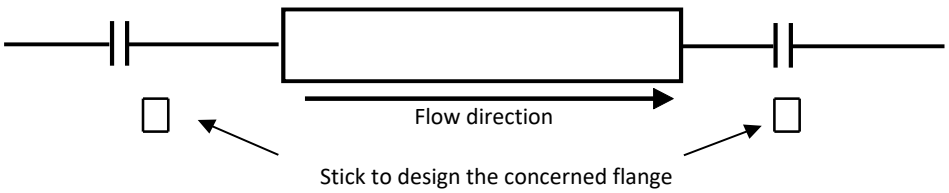

TAG
084-1-J2
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J2
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ROSETTI MARINO — CROSSWIND

ITEM	Tag	084-1-J3	: Joint 084-1-J3			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003989		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	275	82	165	274.4
2	63	275	82	165	274.4
3	63	275	82	165	274.4
4	63	275	82	165	274.4
5	63	275	82	165	274.4
6	63	275	82	165	274.4
7	63	275	82	165	274.4
8	63	275	82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

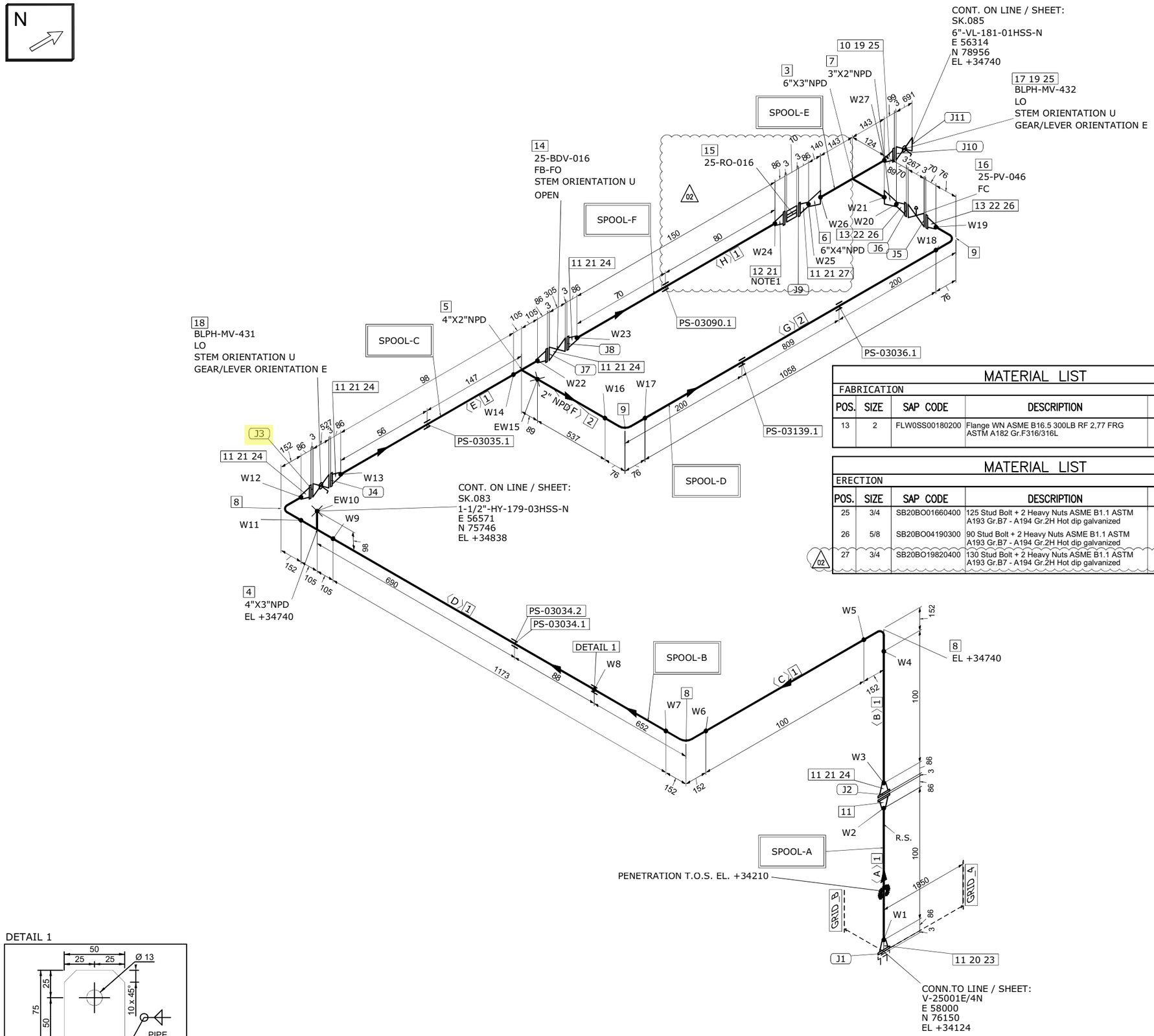
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:47:32.350Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:30:38.185Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

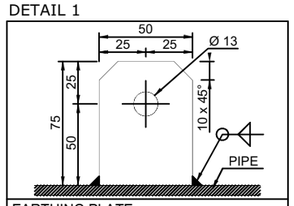
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

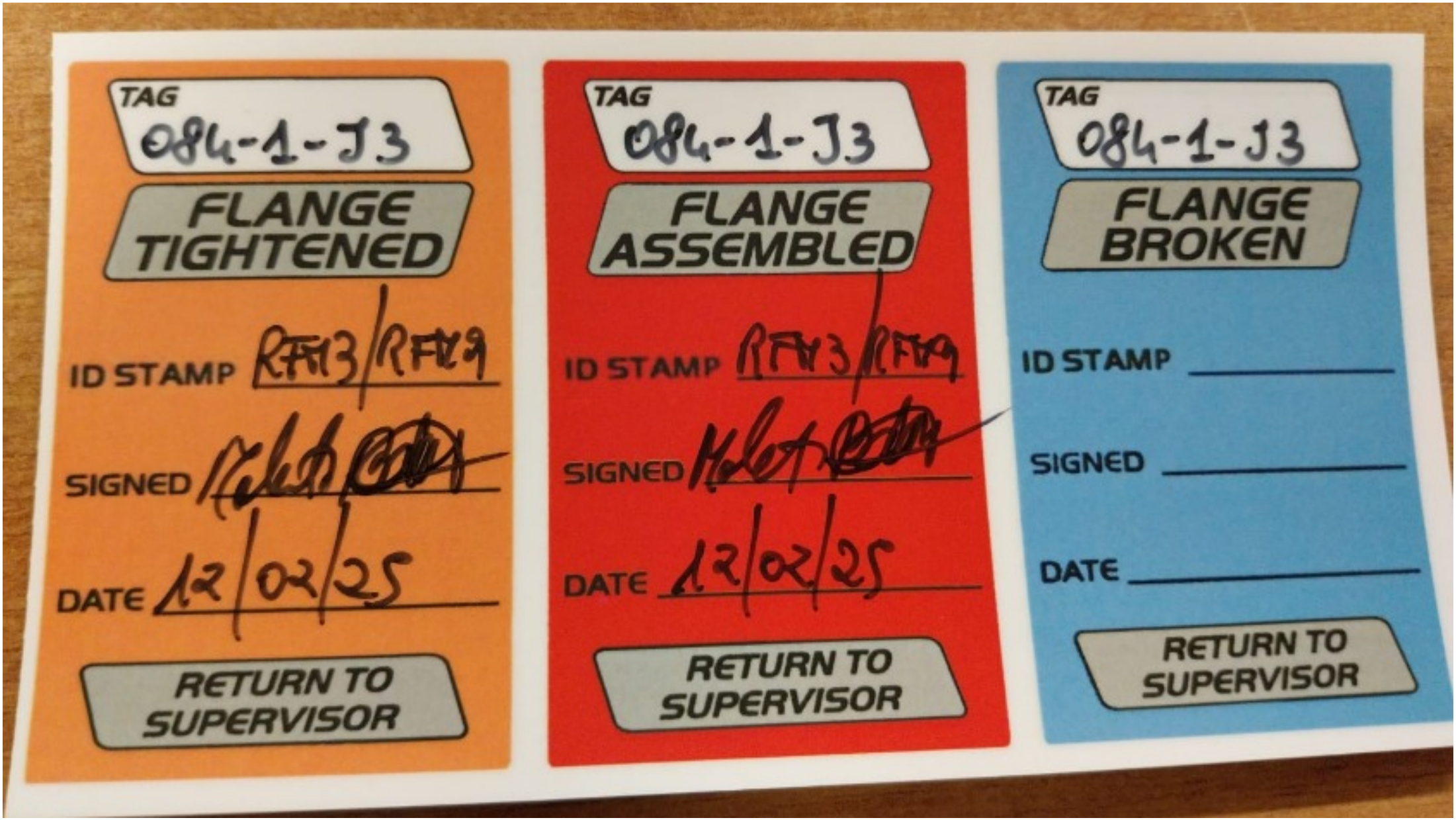
LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

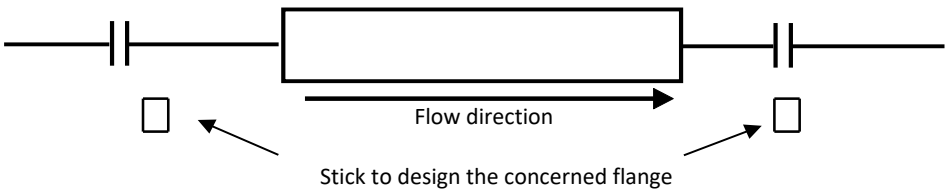
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	17-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00084
SHEET / OF	1/1
REV.	02


TAG
084-1-J3
FLANGE TIGHTENED
ID STAMP RFW3/RFW9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J3
FLANGE ASSEMBLED
ID STAMP RFW3/RFW9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J4	: Joint 084-1-J4			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003990		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	275	82	165	274.4
2	63	275	82	165	274.4
3	63	275	82	165	274.4
4	63	275	82	165	274.4
5	63	275	82	165	274.4
6	63	275	82	165	274.4
7	63	275	82	165	274.4
8	63	275	82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

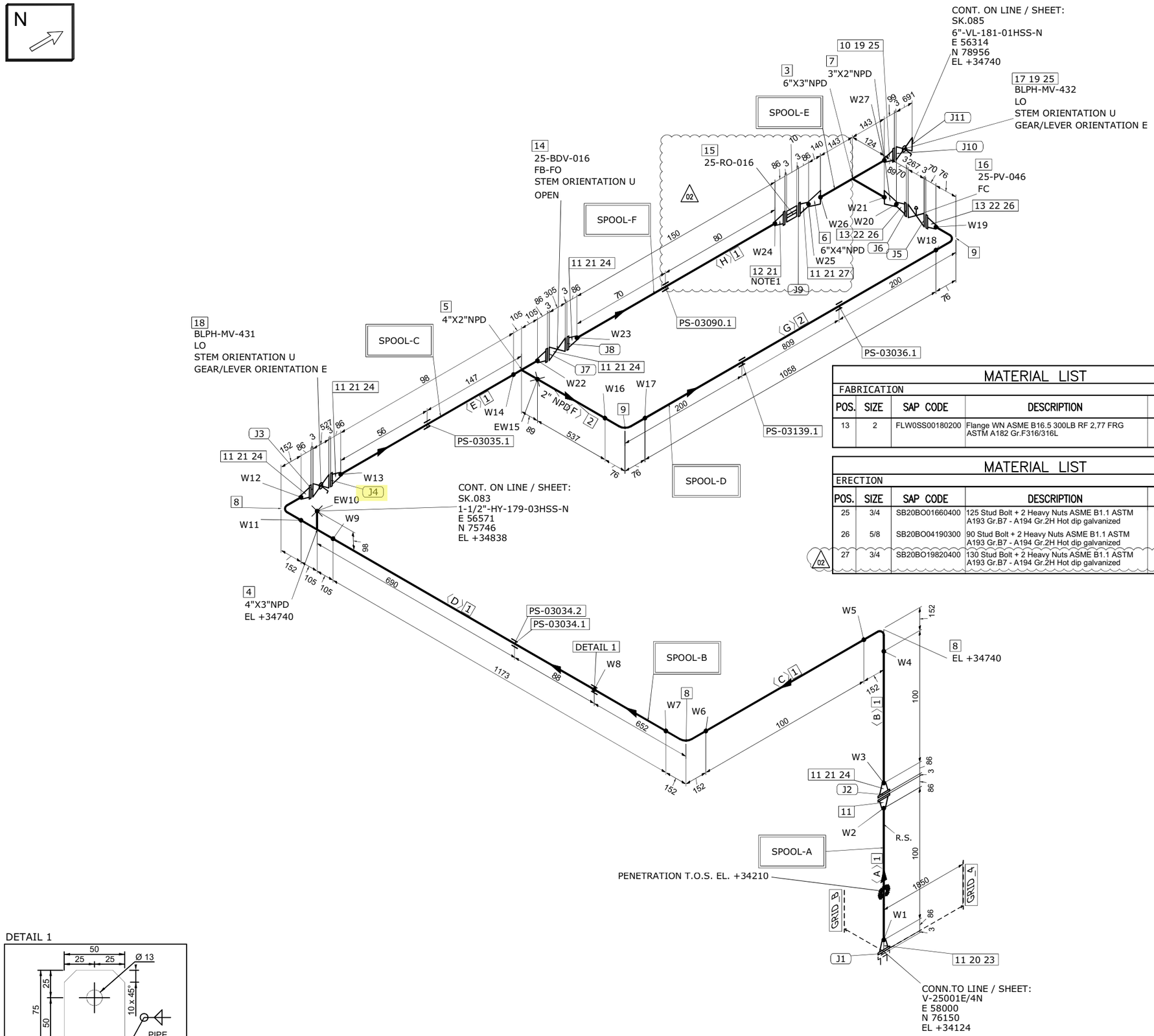
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:47:43.894Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:30:29.279Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

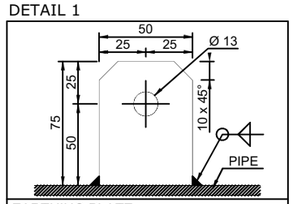
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00084 | SHEET / OF: 1/1 | REV.: 02

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	III				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

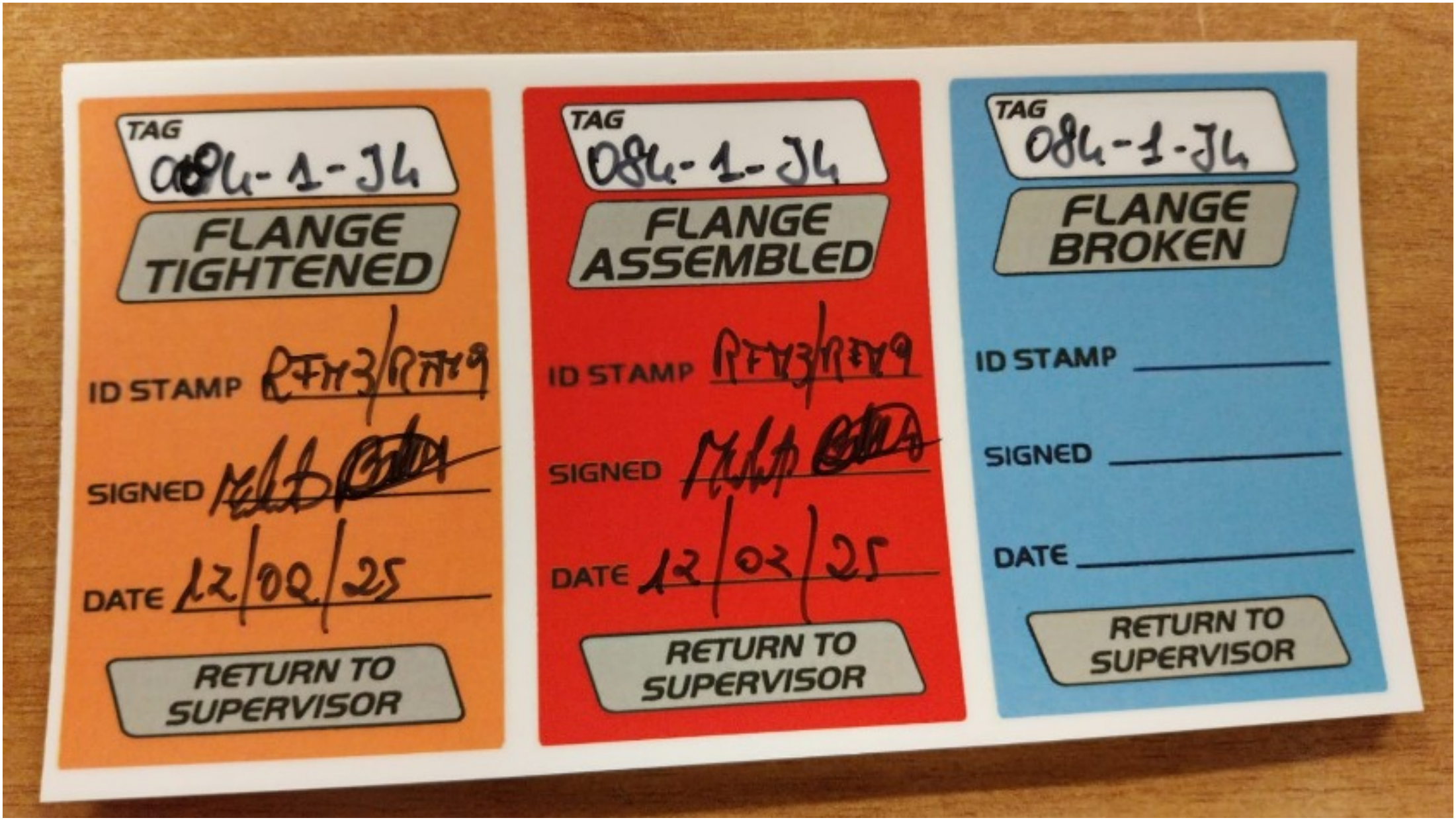
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION E\W

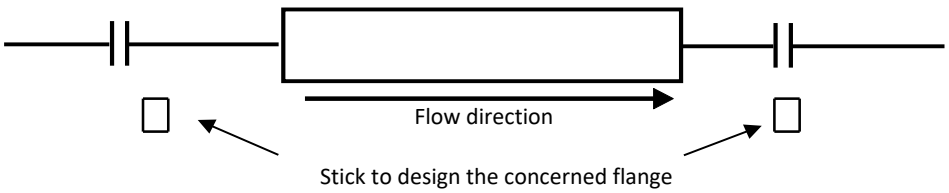
MASTER


TAG
084-1-J4
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J4
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J4
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J5	: Joint 084-1-J5			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003991		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	159	48	95	158.8
2	63	159	48	95	158.8
3	63	159	48	95	158.8
4	63	159	48	95	158.8
5	63	159	48	95	158.8
6	63	159	48	95	158.8
7	63	159	48	95	158.8
8	63	159	48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

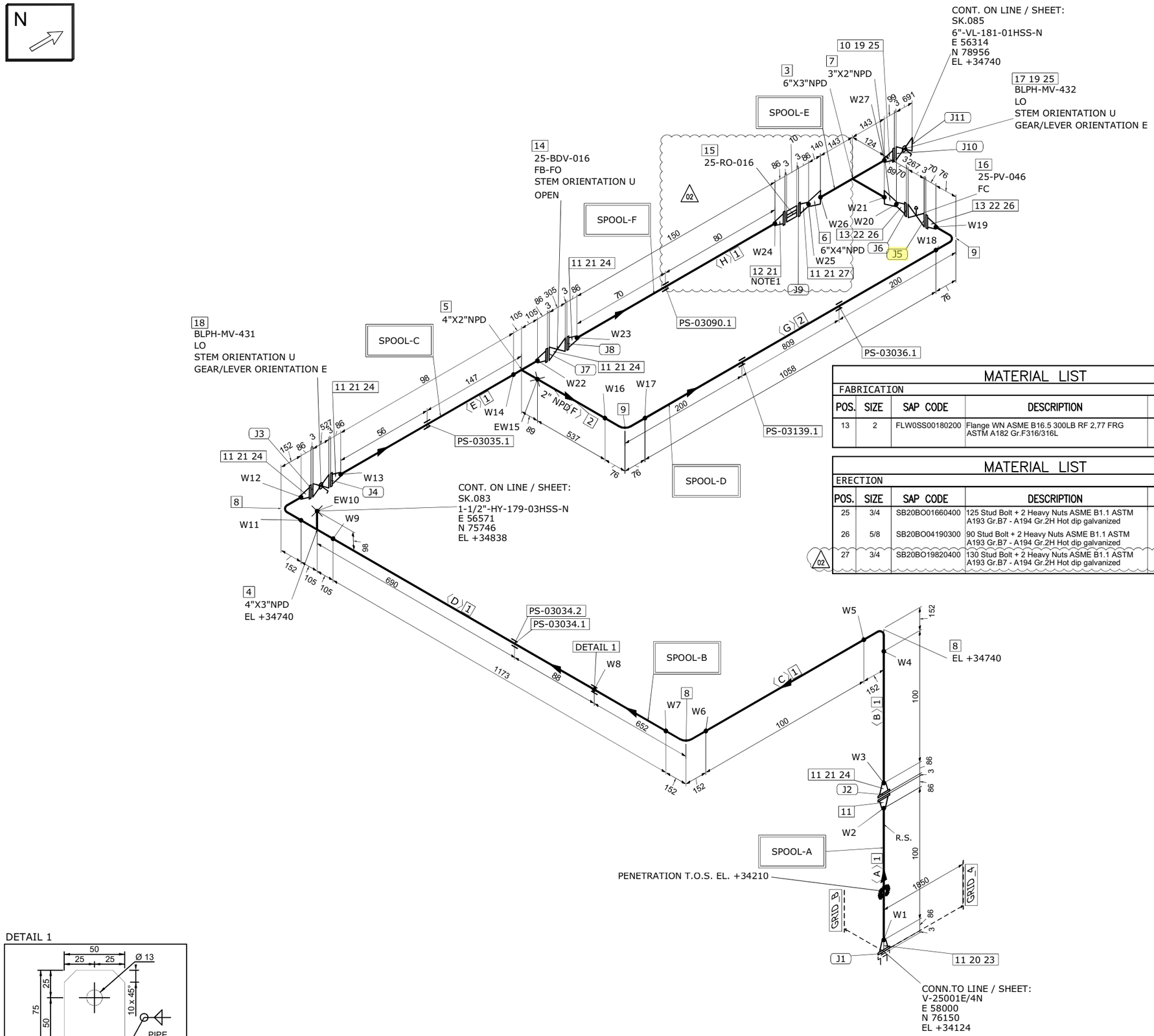
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:47:55.438Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:30:17.016Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

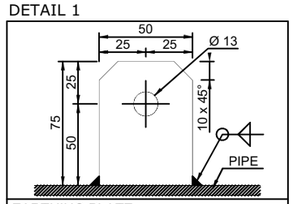
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

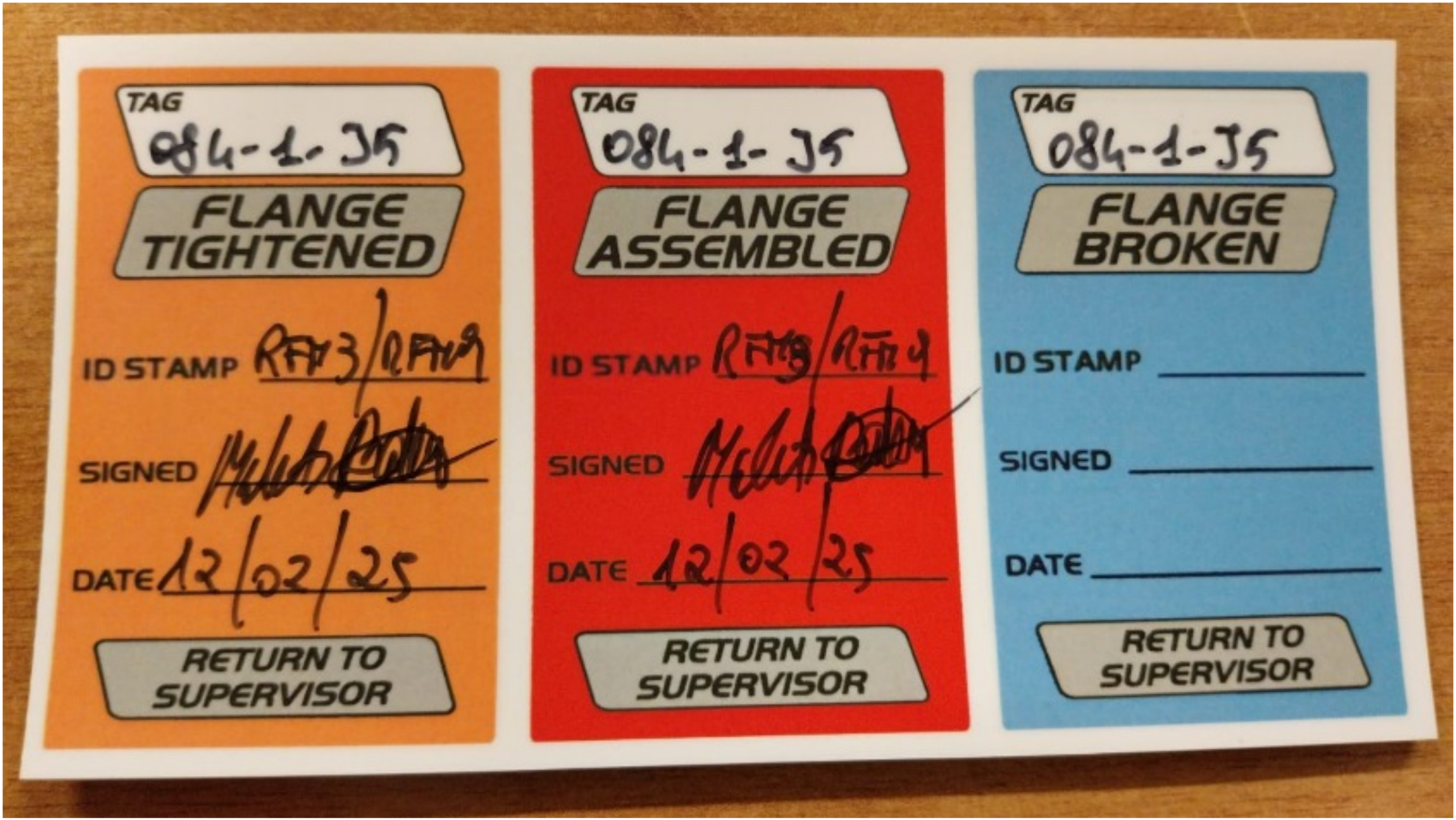
LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	17-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00084
SHEET / OF	1/1
REV.	02


TAG
084-1-J5
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J5
FLANGE ASSEMBLED
ID STAMP RFH3/RFH4
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J5
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

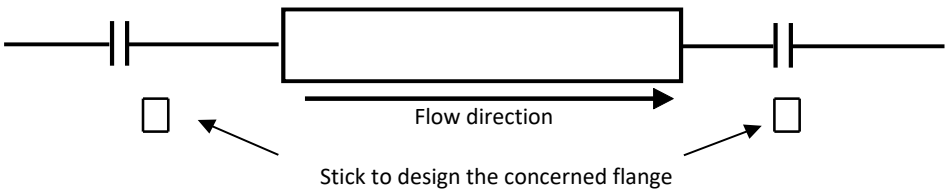
ROSETTI MARINO

CROSSWIND

ITEM	Tag	084-1-J6	: Joint 084-1-J6			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003992		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27

Test Pack N.: TP-042

EQUIPMENT TAG



Stick to design the concerned flange

Flange Type	300LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	159	48	95	158.8
2	63	159	48	95	158.8
3	63	159	48	95	158.8
4	63	159	48	95	158.8
5	63	159	48	95	158.8
6	63	159	48	95	158.8
7	63	159	48	95	158.8
8	63	159	48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

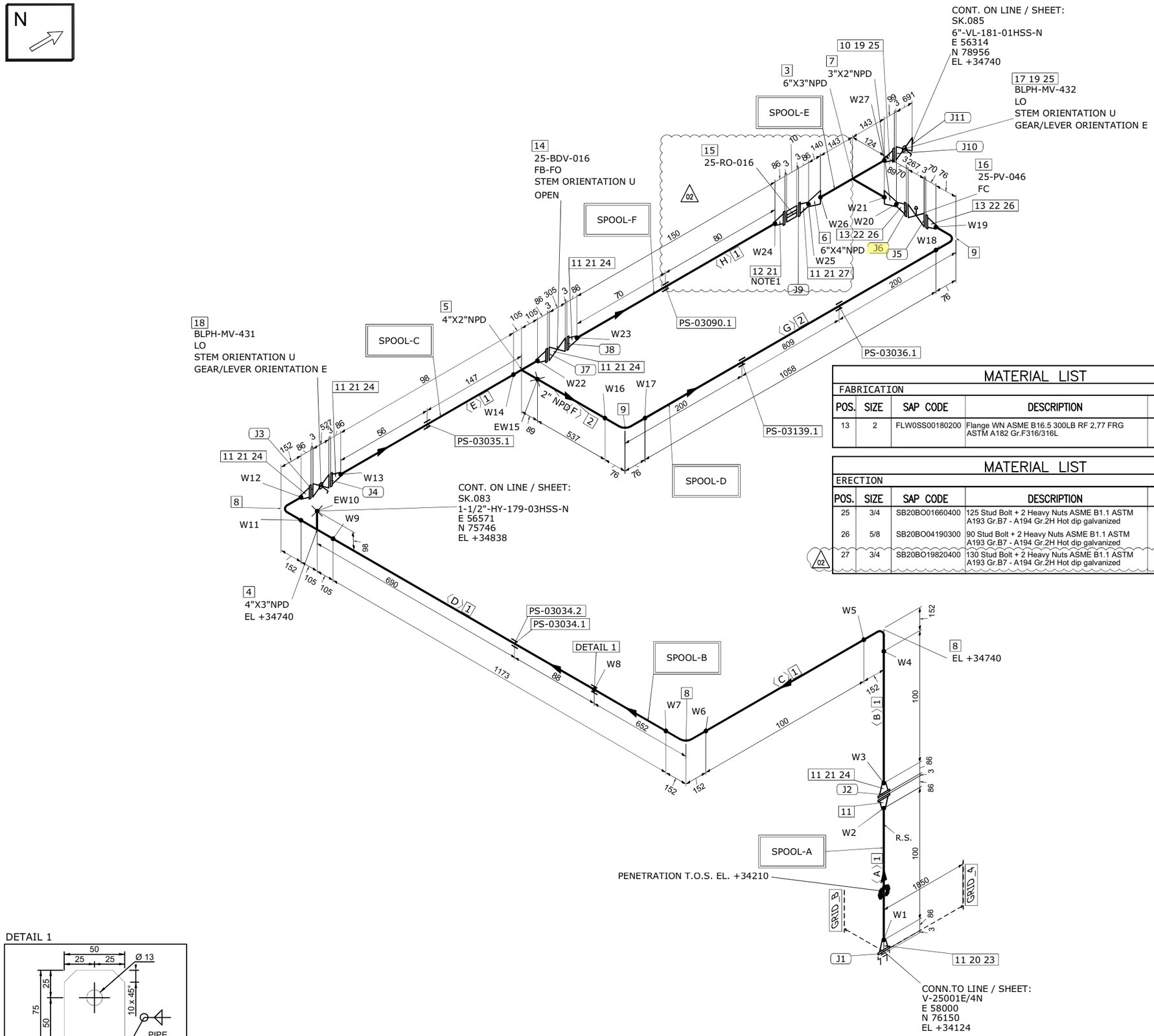
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	Digitaly signed by Emanuele Delfino 2025-02-05T05:48:06.594Z	Digitaly signed by Massimo Bruschi 2025-02-13T07:29:43.062Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

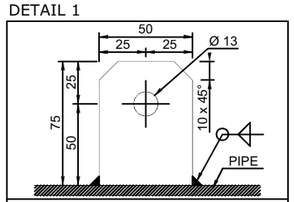
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

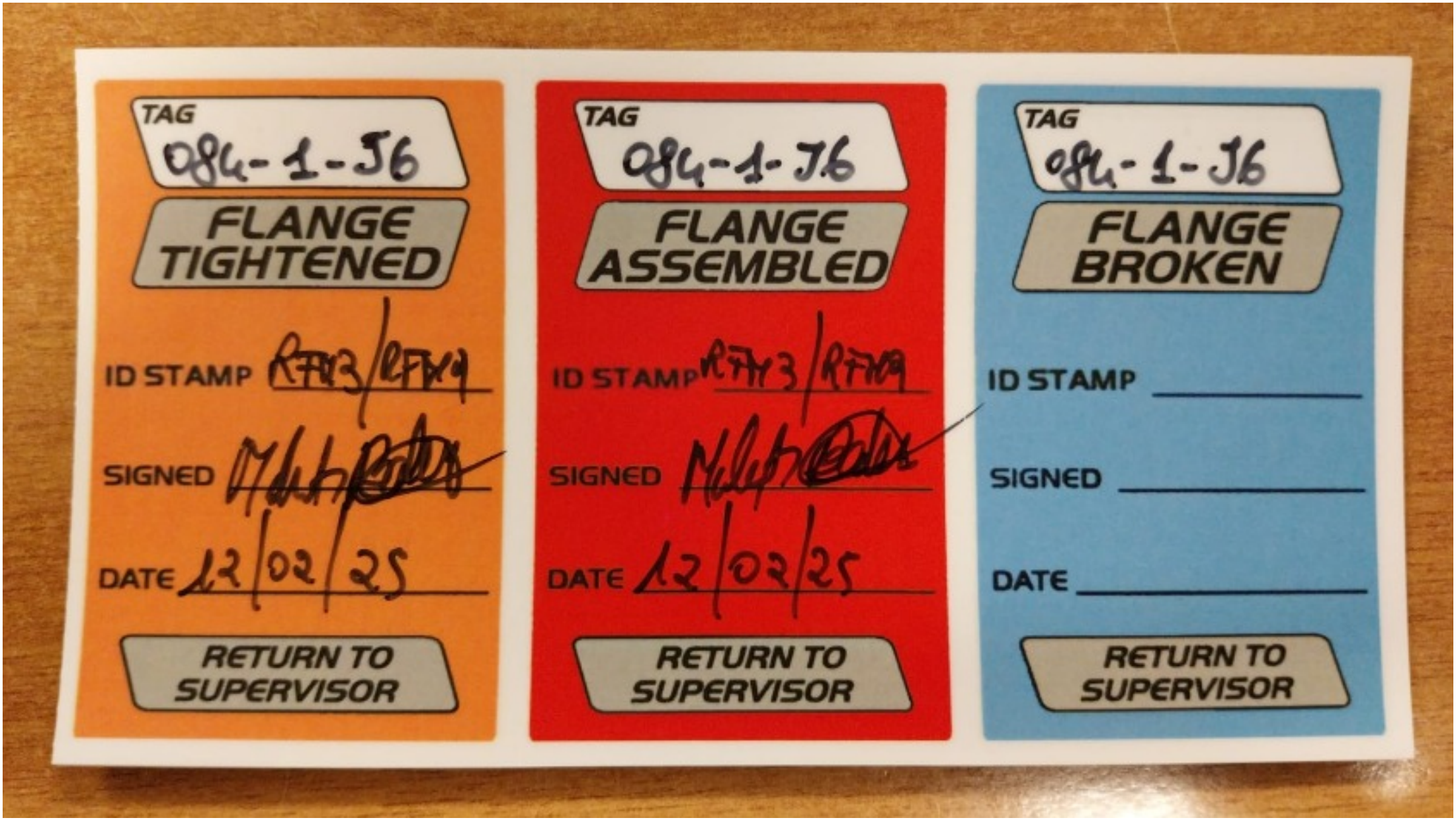
LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

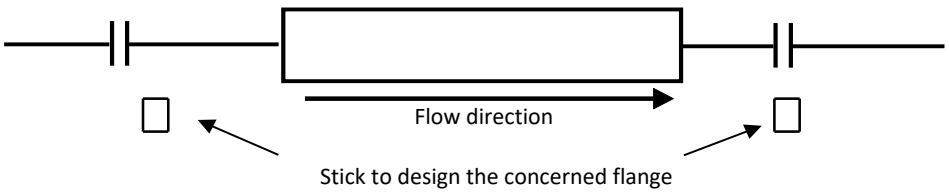
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	17-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00084
SHEET / OF	1/1
REV.	02


TAG
084-1-J6
FLANGE TIGHTENED
ID STAMP RFW3/RFW4
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J6
FLANGE ASSEMBLED
ID STAMP RFW3/RFW4
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J6
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J7	: Joint 084-1-J7			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003993		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	275	82	165	274.4
2	63	275	82	165	274.4
3	63	275	82	165	274.4
4	63	275	82	165	274.4
5	63	275	82	165	274.4
6	63	275	82	165	274.4
7	63	275	82	165	274.4
8	63	275	82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

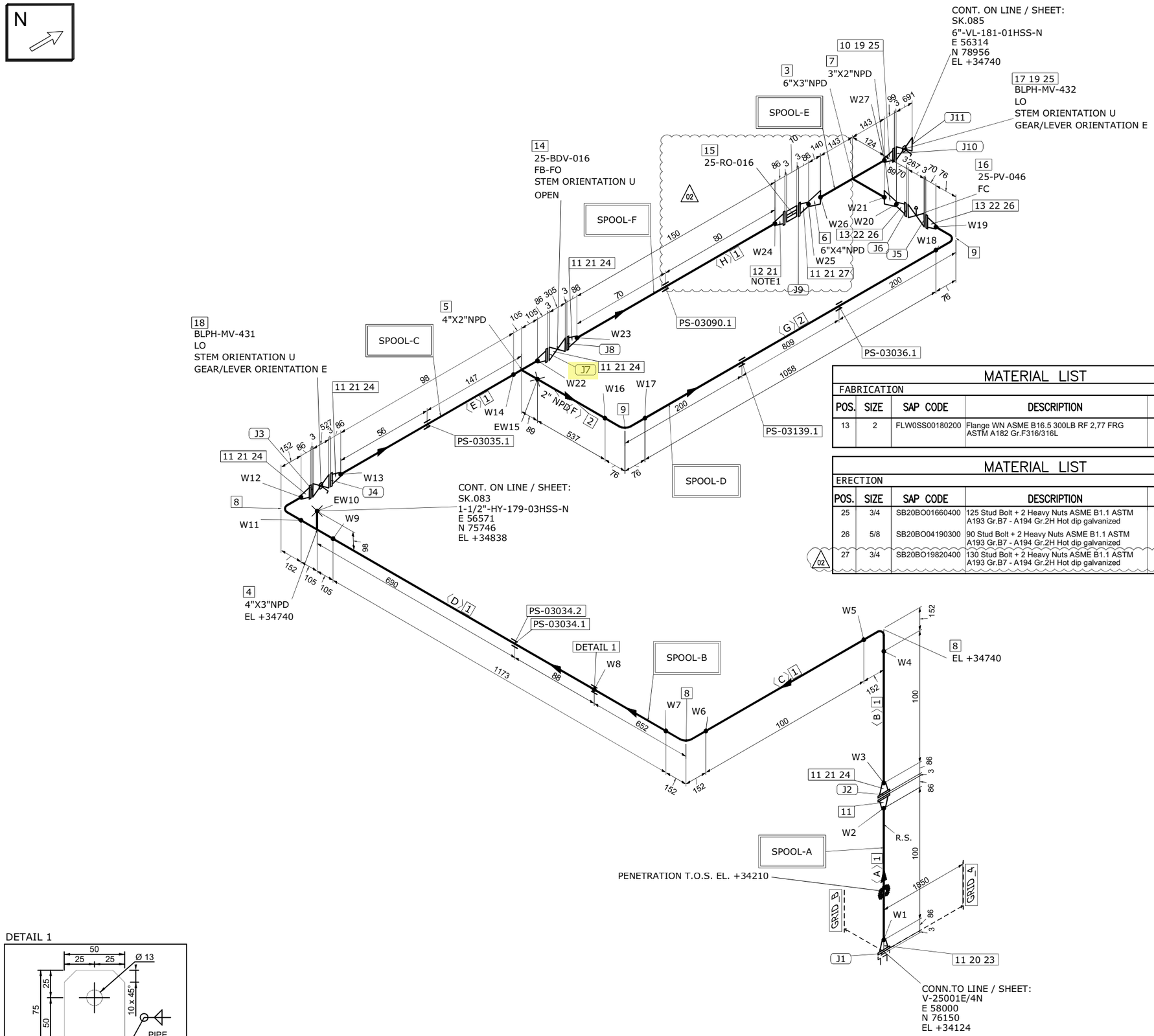
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:48:19.037Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:29:13.939Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

02

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

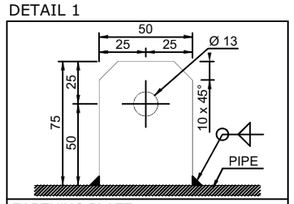
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

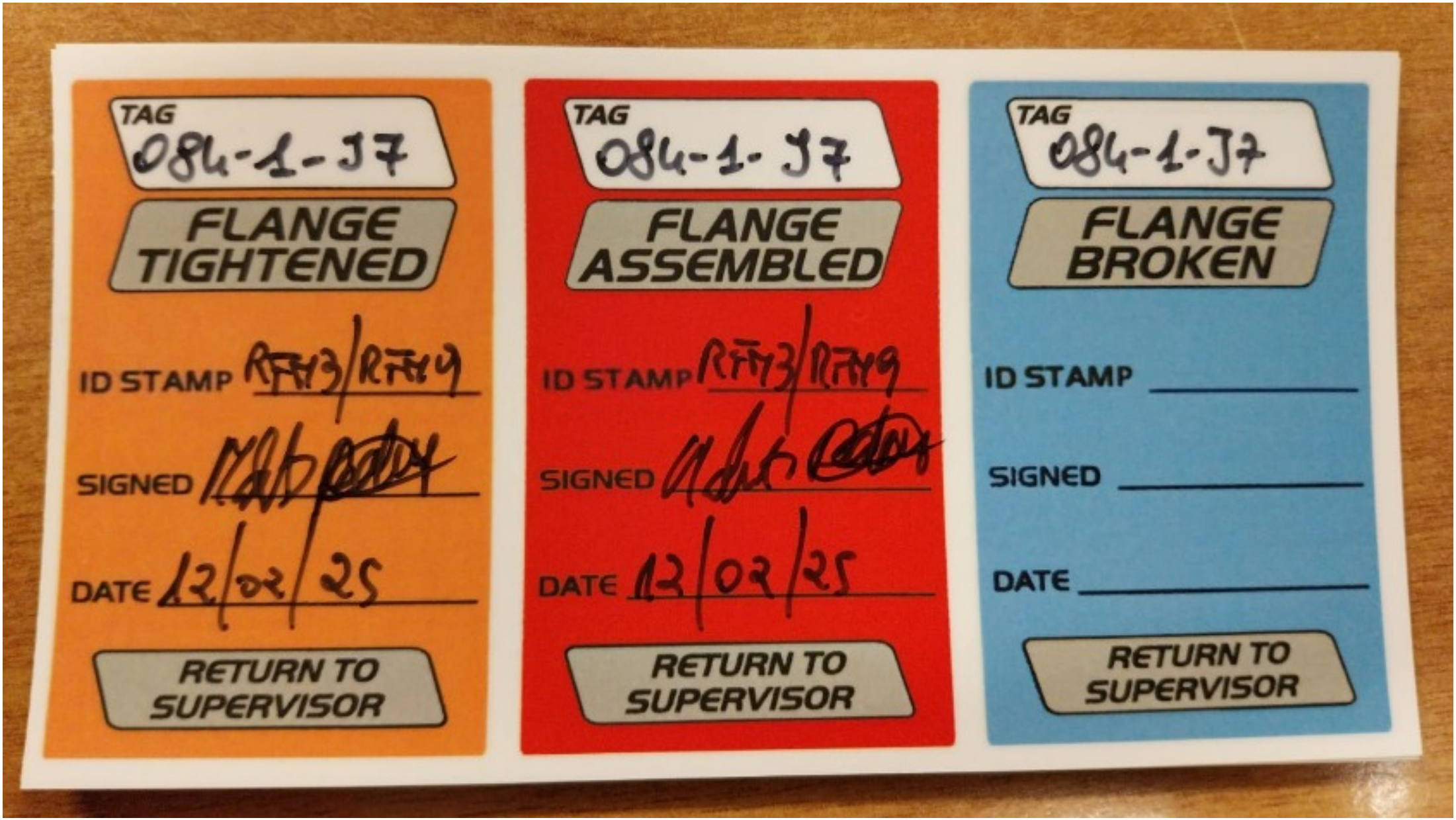
LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

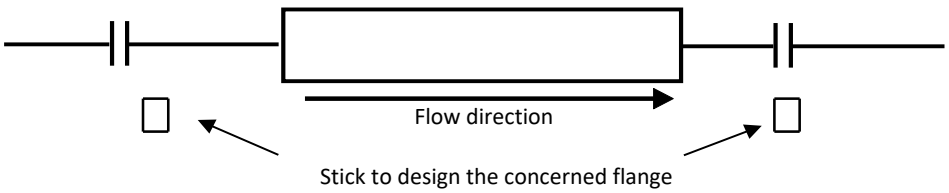
CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00084 | SHEET / OF: 1/1 | REV.: 02


TAG
084-1-J7
FLANGE TIGHTENED
ID STAMP RTH3/RTH4
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J7
FLANGE ASSEMBLED
ID STAMP RTH3/RTH4
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J7
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J8	: Joint 084-1-J8			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003994		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	63	275	82	165	274.4
2	63	275	82	165	274.4
3	63	275	82	165	274.4
4	63	275	82	165	274.4
5	63	275	82	165	274.4
6	63	275	82	165	274.4
7	63	275	82	165	274.4
8	63	275	82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

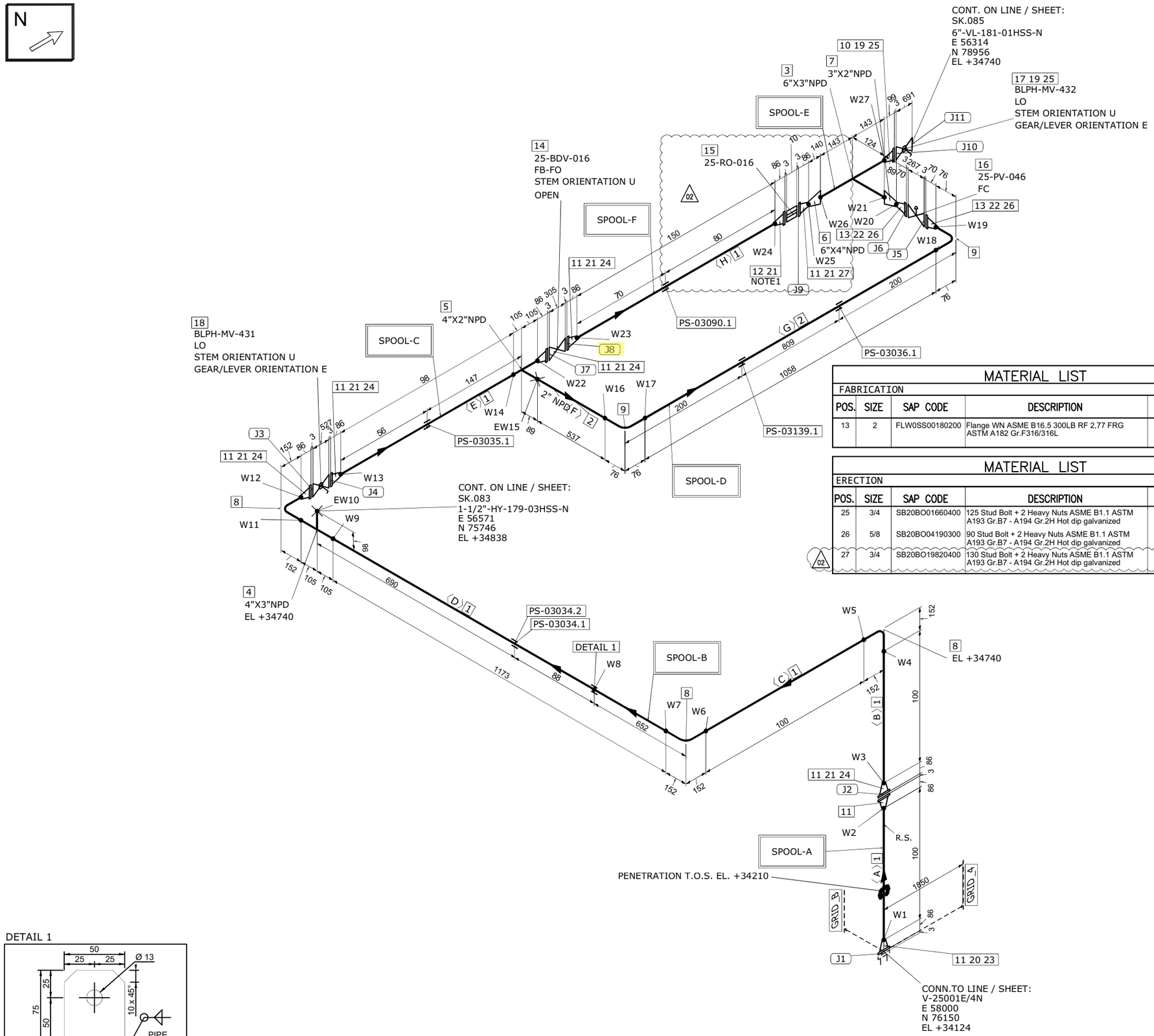
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:48:29.501Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:29:01.741Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

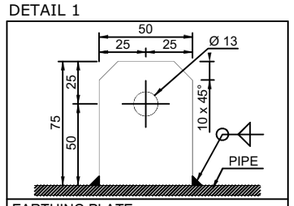
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

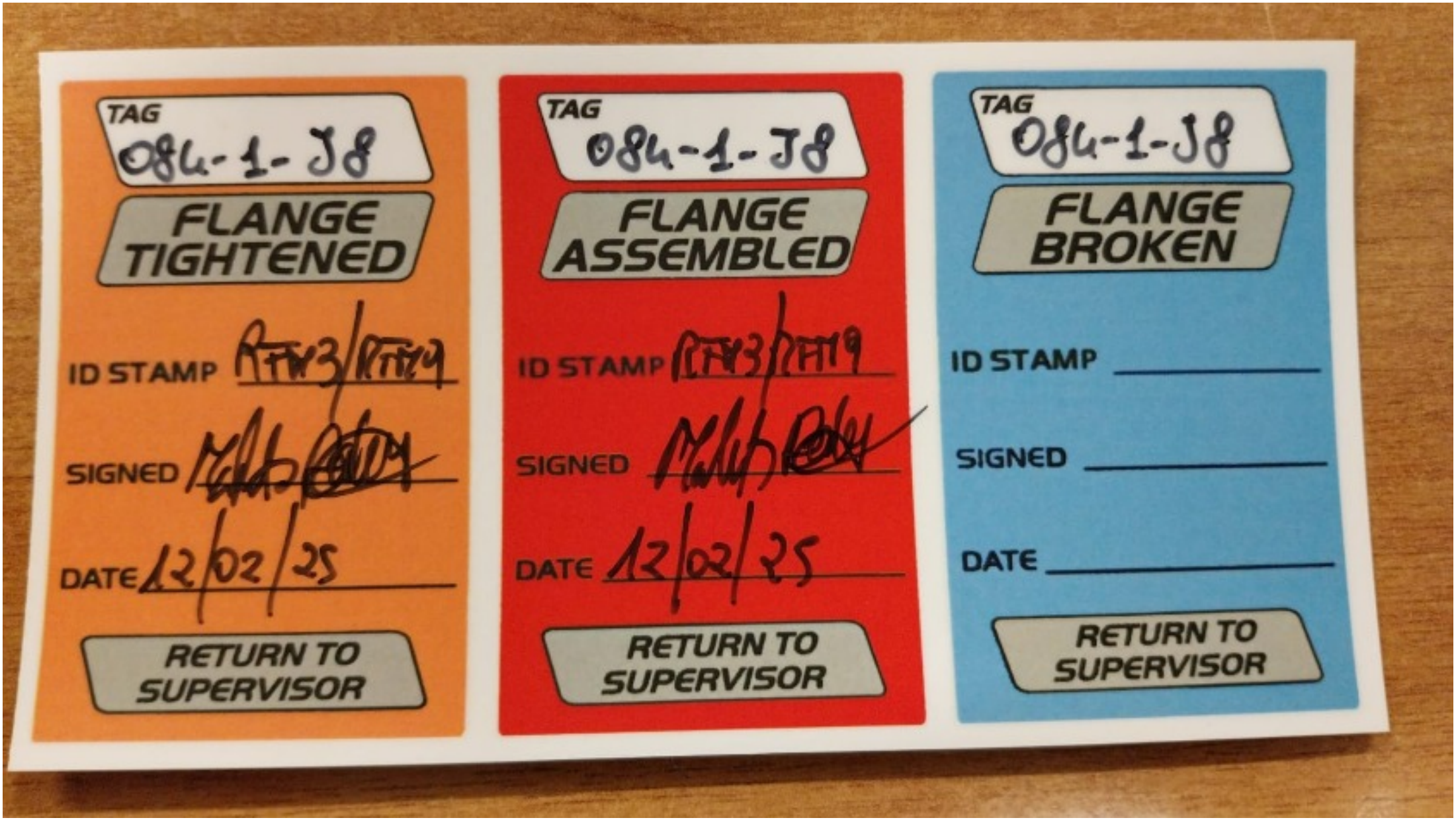
LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

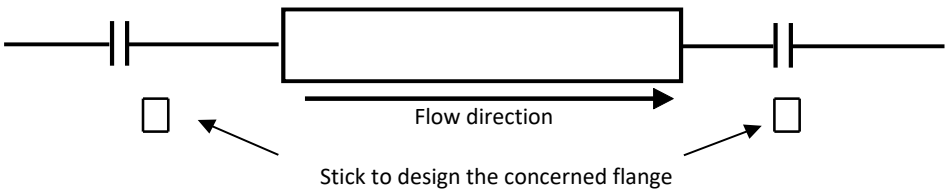
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SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00084 | SHEET / OF: 1/1 | REV.: 02


TAG
084-1-J8
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J8
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J8
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J9	: Joint 084-1-J9			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003995		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	82	275	82	165	274.4
2	82	275	82	165	274.4
3	82	275	82	165	274.4
4	82	275	82	165	274.4
5	82	275	82	165	274.4
6	82	275	82	165	274.4
7	82	275	82	165	274.4
8	82	275	82	165	274.4
9			82	165	274.4
10			82	165	274.4
11			82	165	274.4
12			82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

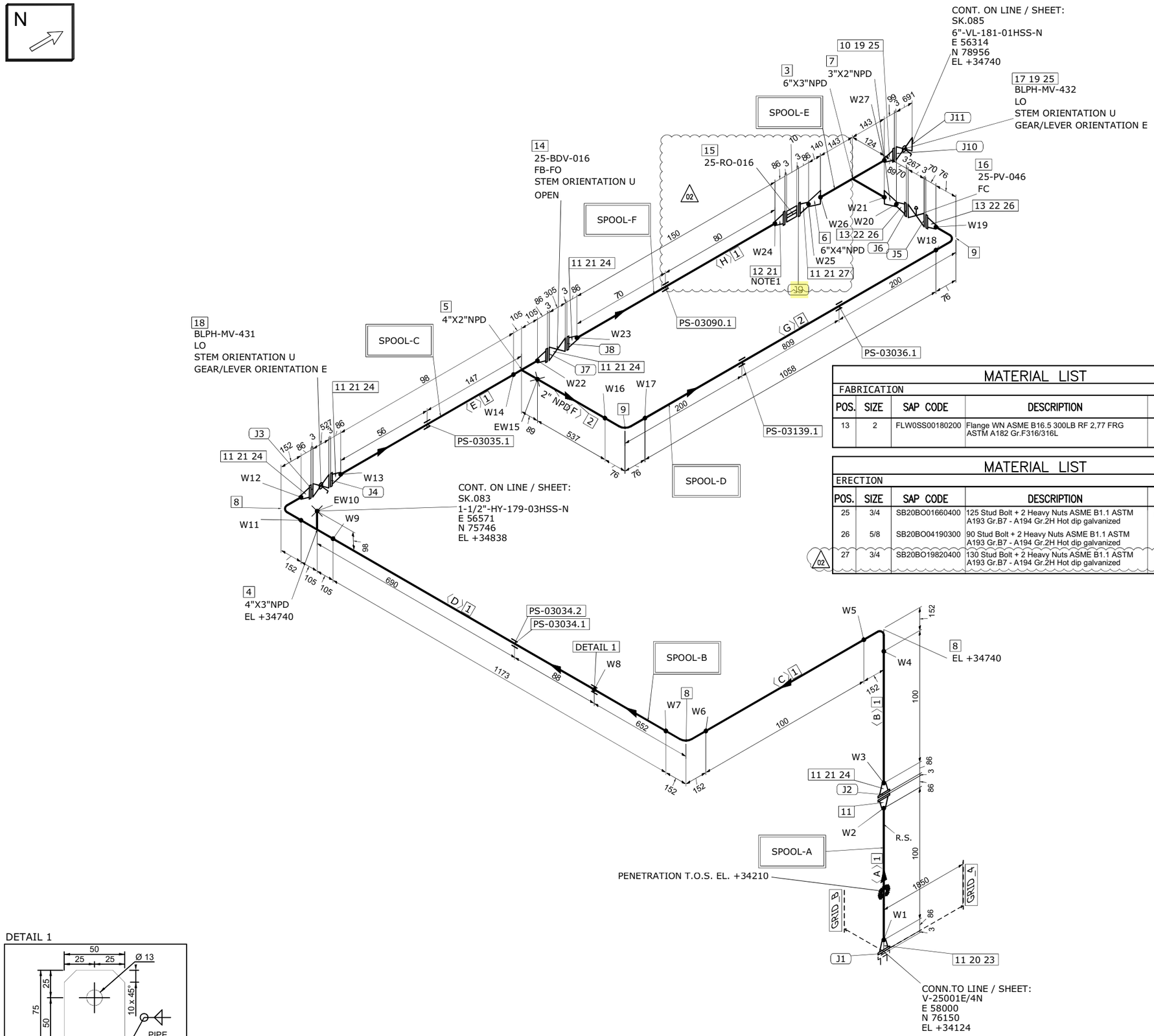
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:48:42.392Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-13T07:28:49.715Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

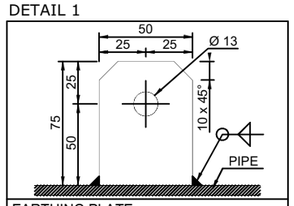
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

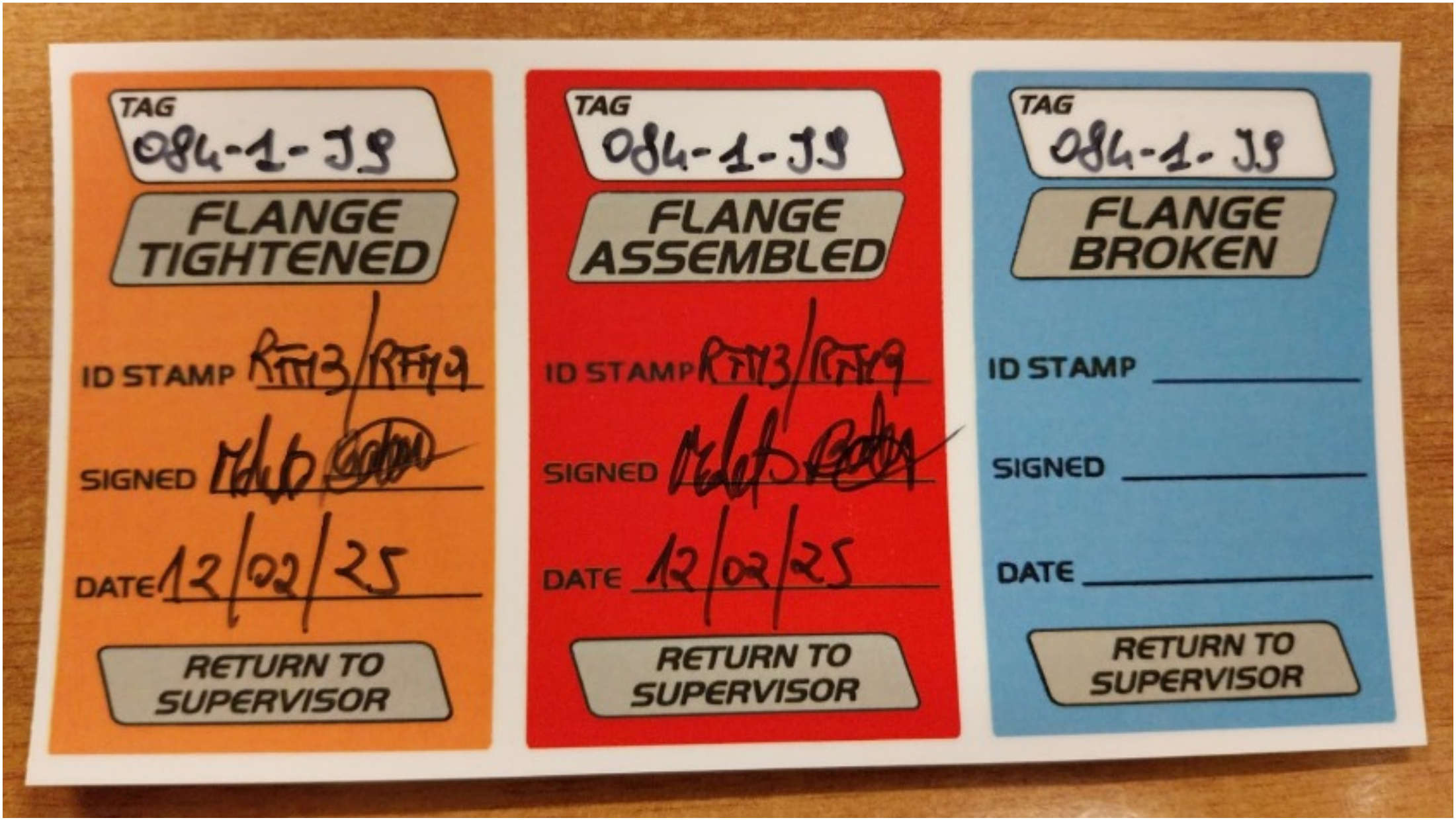
LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

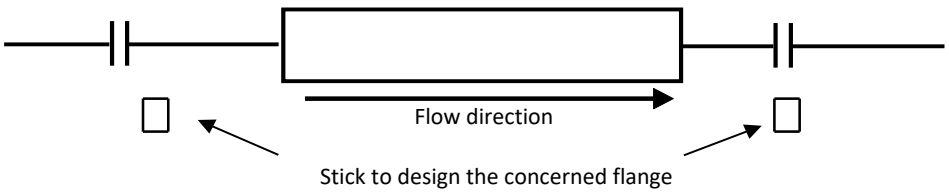
CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00084 | SHEET / OF: 1/1 | REV.: 02


TAG
084-1-J9
FLANGE TIGHTENED
ID STAMP RTH3/RTH9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J9
FLANGE ASSEMBLED
ID STAMP RTH3/RTH9
SIGNED
DATE 12/02/25
RETURN TO SUPERVISOR
TAG
084-1-J9
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J10	: Joint 084-1-J10		Dwg	123A90-FDL-PP-DI-00084-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10003996	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX27	Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	6"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	82	275	82	165	274.4
2	82	275	82	165	274.4
3	82	275	82	165	274.4
4	82	275	82	165	274.4
5	82	275	82	165	274.4
6	82	275	82	165	274.4
7	82	275	82	165	274.4
8	82	275	82	165	274.4
9	82	275	82	165	274.4
10	82	275	82	165	274.4
11	82	275	82	165	274.4
12	82	275	82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

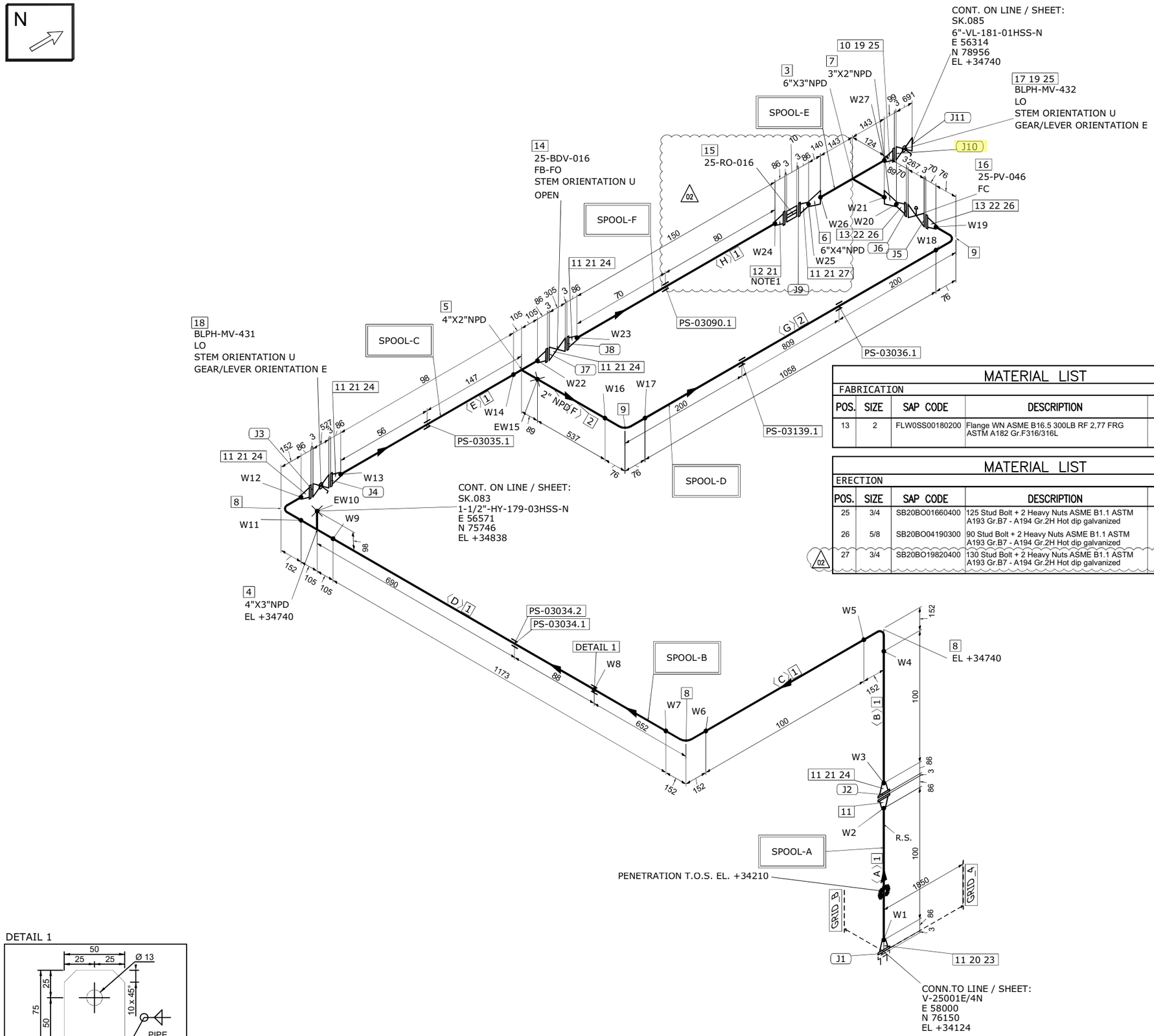
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-12	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:48:55.776Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-12T09:12:50.195Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

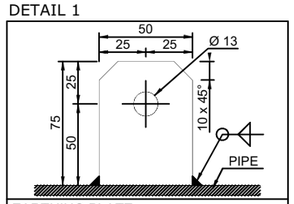
PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

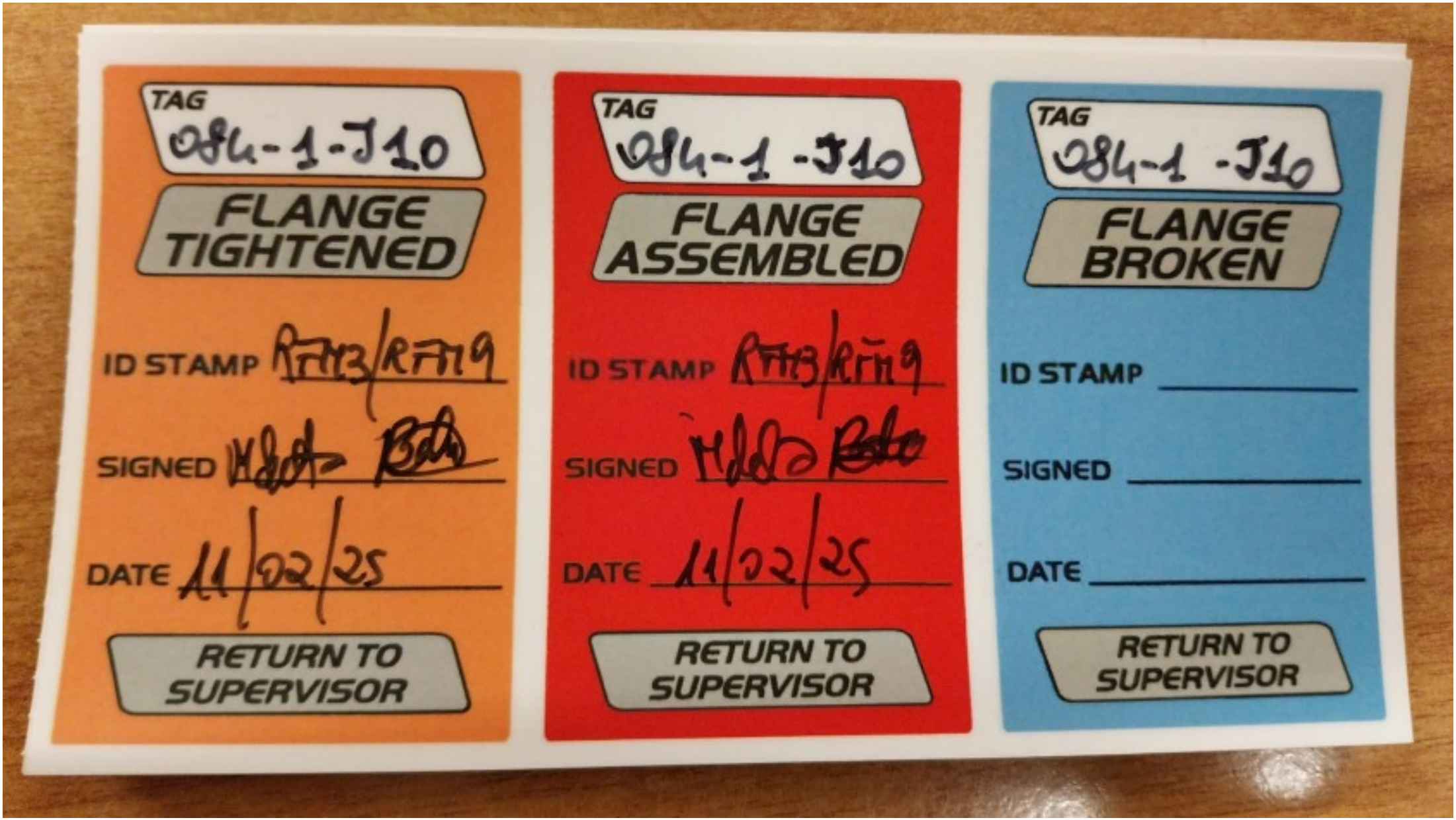
LINE DATA							
NDT INSPECTION CATEGORY	1		PED CATEGORY	III			
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION E\W

MASTER

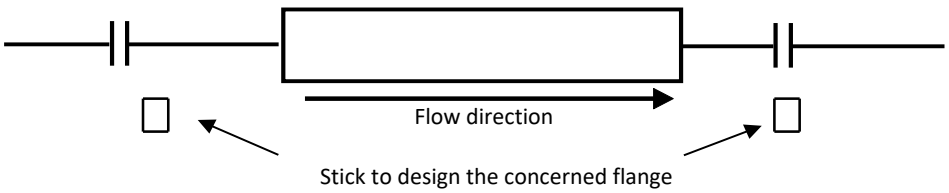
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SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00084 | SHEET / OF: 1/1 | REV.: 02


TAG
084-1-J10
FLANGE TIGHTENED
ID STAMP RTH3/RTH9
SIGNED
DATE 11/22/25
RETURN TO SUPERVISOR
TAG
084-1-J10
FLANGE ASSEMBLED
ID STAMP RTH3/RTH9
SIGNED
DATE 11/22/25
RETURN TO SUPERVISOR
TAG
084-1-J10
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	084-1-J11	: Joint 084-1-J11			Dwg	123A90-FDL-PP-DI-00084-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10003997		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-042

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	6"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench RD00261 (60-320 Nm)
Bolt tensioning/Torquing value	274.4		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	82	275	82	165	274.4
2	82	275	82	165	274.4
3	82	275	82	165	274.4
4	82	275	82	165	274.4
5	82	275	82	165	274.4
6	82	275	82	165	274.4
7	82	275	82	165	274.4
8	82	275	82	165	274.4
9	82	275	82	165	274.4
10	82	275	82	165	274.4
11	82	275	82	165	274.4
12	82	275	82	165	274.4
13			82	165	274.4
14			82	165	274.4
15			82	165	274.4
16			82	165	274.4
17			82	165	274.4
18			82	165	274.4
19			82	165	274.4
20			82	165	274.4

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

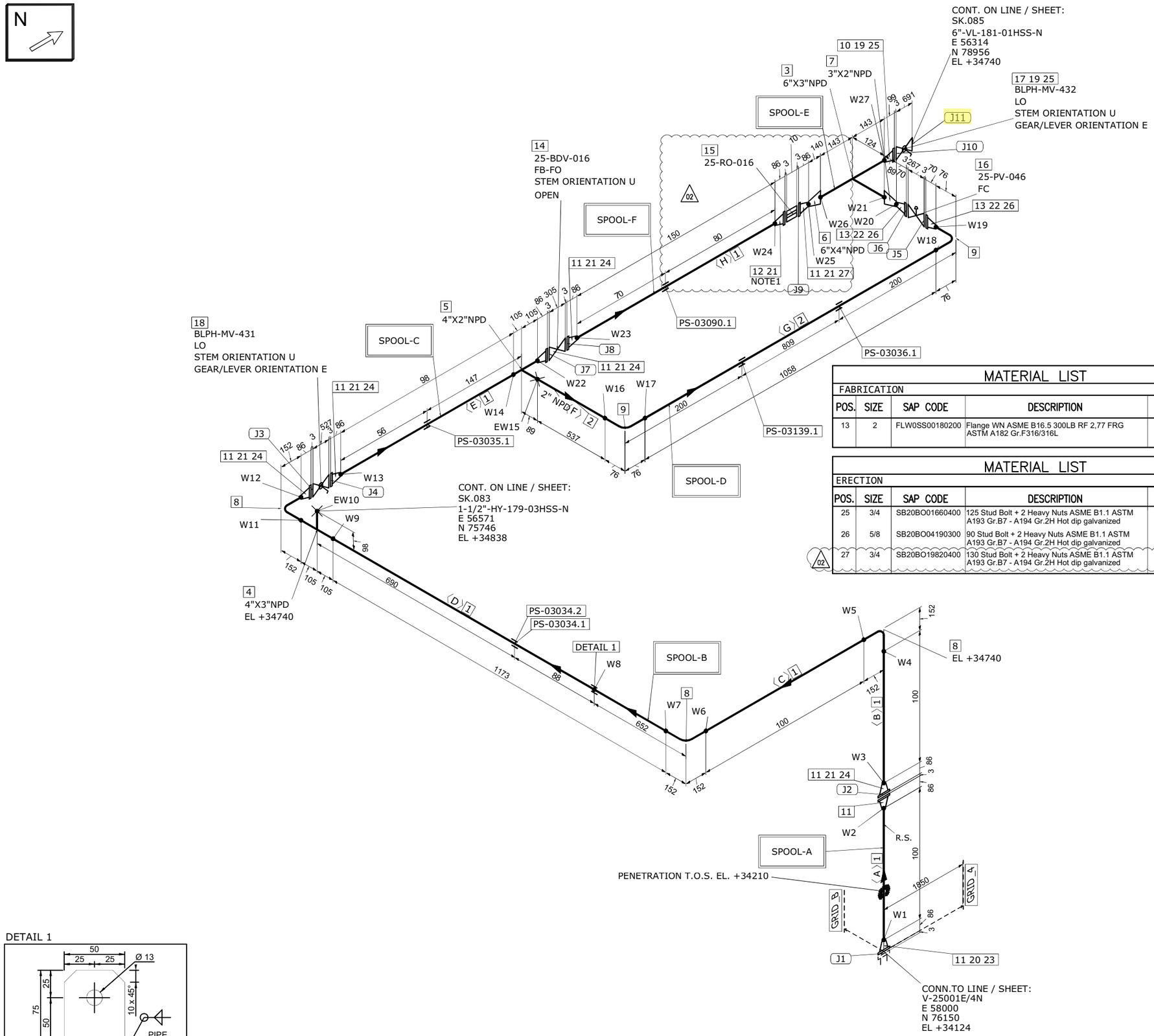
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

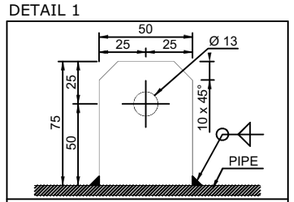
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-02-05	2025-02-12	
Signature	Digitaly signed by Emanuele Delfino 2025-02-05T05:49:07.117Z	Digitaly signed by Massimo Bruschi 2025-02-12T09:17:31.127Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	2	FLW0SS00180200	Flange WN ASME B16.5 300LB RF 2,77 FRG ASTM A182 Gr.F316/316L	2	8.3

MATERIAL LIST

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	3/4	SB20BO01660400	125 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	24 (02)	10.7
26	5/8	SB20BO04190300	90 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	16	4.0
27	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	4.0

(02)

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESS00560400	Pipe ASME B36.19M PE 3,05 SML ASTM A312 Gr.TP316/316L	1.7M	14.7
2	2	PIPESS00540200	Pipe ASME B36.19M PE 2,77 SML ASTM A312 Gr.TP316/316L	1.6M	6.4
3	6X3	TER0SS03820603	Tee Reducing ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	16.2
4	4X3	TER0SS01680403	Tee Reducing ASME B16.9 BW 3,05x3,05 WRS ASTM A403 Gr.WP316/316L	1	2.7
5	4X2	TER0SS03250402	Tee Reducing ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	2.6
6	6X4	REC0SS03250604	Reducer Concentric ASME B16.9 BW 7,11x3,05 WRS ASTM A403 Gr.WP316/316L	1	3.6
7	3X2	REC0SS02770302	Reducer Concentric ASME B16.9 BW 3,05x2,77 WRS ASTM A403 Gr.WP316/316L	1	0.5
8	4	E90RSS01020400	90 Deg Elbow Long Radius ASME B16.9 BW 3,05 WRS ASTM A403 Gr.WP316/316L	3	6.0
9	2	E90RSS00010200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A403 Gr.WP316/316L	2	0.9
10	6	FLW0SS03290600	Flange WN ASME B16.5 300LB RF 7,11 FRG ASTM A182 Gr.F316/316L	1	19.3
11	4	FLW0SS03370400	Flange WN ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	8	89.4
12	4	FLWDSS00030400	Flange WN For Jackscrews ASME B16.5 300LB RF 3,05 FRG ASTM A182 Gr.F316/316L	1	11.2

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	4		ON/OFF Ball Actuator Valve - 300#RF Flanged	1	169.0
15	4		Restriction Orifice 300#RF	1	1.0
16	2		Control Valve - FLG 300 #RF	1	75.0
17	6	VLBBNN07240600	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	350.0
18	4	VLBBNN07230400	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	1	170.0
19	6	GSW0GK11260600	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.9
20	4	SPIKNN00700400	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.3
21	4	GSW0GK11250400	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	7	2.6
22	2	GSW0GK11230200	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	2	0.3
23	3/4	SB20BO19820400	130 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	3.8
24	3/4	SB20BO01650400	115 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	40	17.6

FABRICATION WEIGHT [kg]	181.8
ERECTION WEIGHT [kg]	809.2
OVERALL WEIGHT [kg]	981.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	4	BW
W2	4	BW
W3	4	BW
W4	4	BW
W5	4	BW
W6	4	BW
W7	4	BW
W8		FW
W9	4	BW
EW10	3	BW
W11	4	BW
W12	4	BW
W13	4	BW
W14	4	BW
EW15	2	BW
W16	2	BW
W17	2	BW
W18	2	BW
W19	2	BW
W20	2	BW
W21	3	BW
W22	4	BW
W23	4	BW
W24	4	BW
W25	4	BW
W26	6	BW
W27	6	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	4	100	BEVEL	BEVEL
B	4	100	BEVEL	BEVEL
C	4	100	BEVEL	BEVEL
D	4	1173	BEVEL	BEVEL
E	4	98	BEVEL	BEVEL
F	2	537	BEVEL	BEVEL
G	2	1058	BEVEL	BEVEL
H	4	150 (02)	BEVEL	BEVEL

SUPPORT LIST

PS-03034.2
PS-03034.1
PS-03035.1
PS-03139.1
PS-03036.1
PS-03090.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	8	23.2
B	32	42.7
C	12	25.7
D	8	11.5
E	21	54.9
F	8	23.7
MONT	5	809.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 4"-HY-180-03HSS-N

SK.084

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	17-09-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00084
SHEET / OF	1/1
REV.	02

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	III				
PAINTING	SYSTEM 6A	BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	--		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION E\W

MASTER

TAG 084-1-J11

FLANGE TIGHTENED

ID STAMP RTM3/RTM9

SIGNED [signature]

DATE 11/02/25

RETURN TO SUPERVISOR

TAG 084-1-J11

FLANGE ASSEMBLED

ID STAMP RTM3/RTM9

SIGNED [signature]

DATE 11/02/25

RETURN TO SUPERVISOR

TAG 084-1-J11

FLANGE BROKEN

ID STAMP _____

SIGNED _____

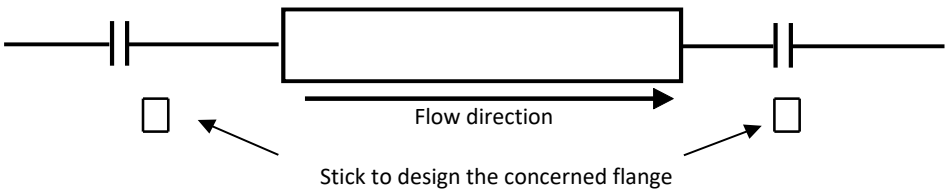
DATE _____

RETURN TO SUPERVISOR

ITEM	Tag	093-1-J6	: Joint 093-1-J6		Dwg	123A90-FDL-PP-DI-00093-01	
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)		Module	UD	
TASK	code	C10004044	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX27	Bolt tensioning / torquing

Test Pack N.: TP-018

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	48	159	48	95	158.8
2	48	159	48	95	158.8
3	48	159	48	95	158.8
4	48	159	48	95	158.8
5			48	95	158.8
6			48	95	158.8
7			48	95	158.8
8			48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

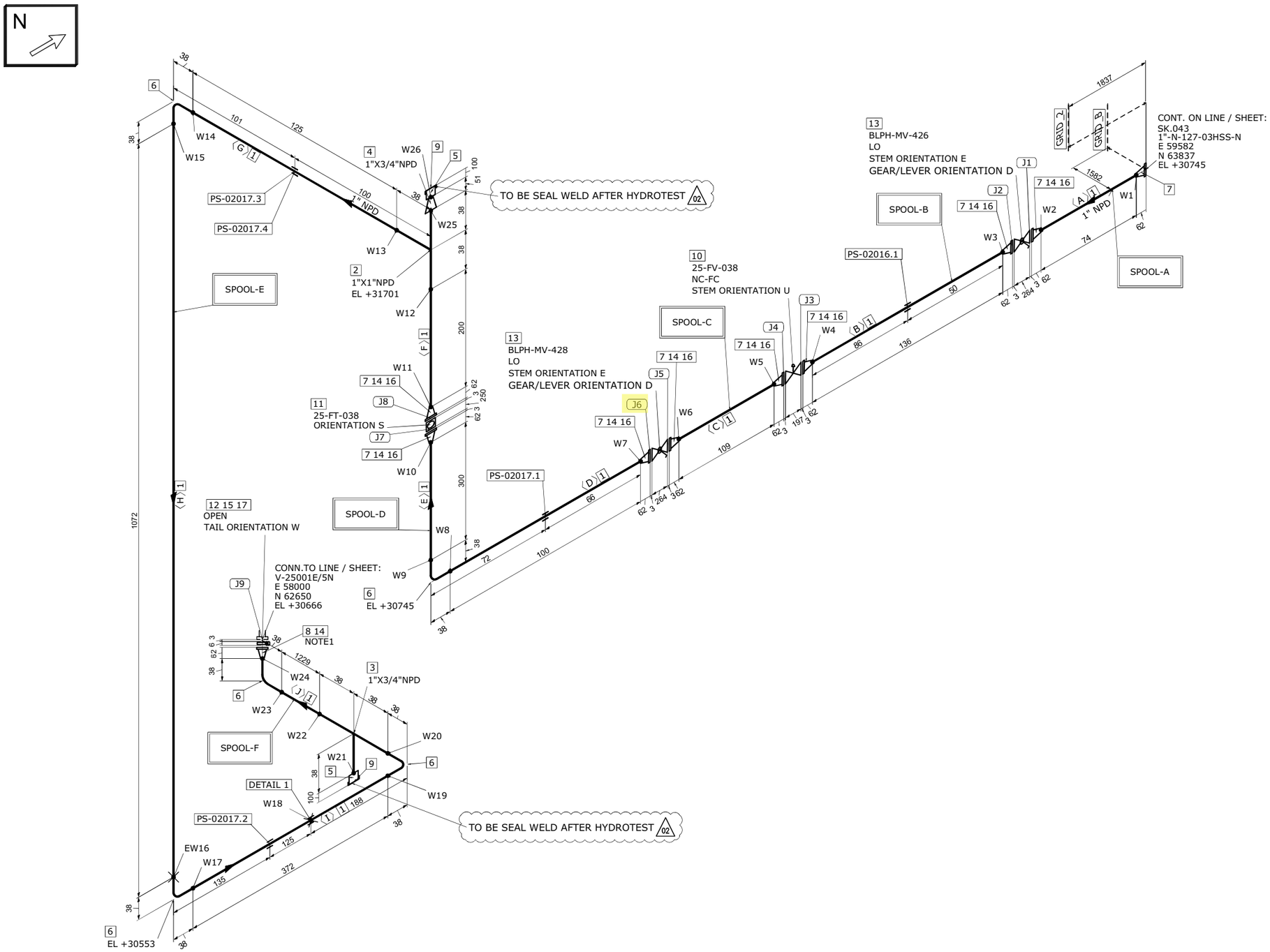
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

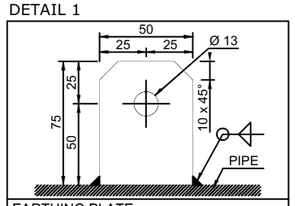
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-18	2025-01-20	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-18T08:33:02.181Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-20T08:35:26.679Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.7M	9.4
2	1X1	TEE0SS00550100	Tee ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
4	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
5	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	2	0.3
6	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
7	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	9	16.5
8	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
9	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	2	0.4
10	1		Control Valve - FLG 300 #RF	1	40.0
11	1		Flow Transmitter - ANSI - FLG 300#	1	12.0
12	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
13	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	2	27.0
14	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	9	0.6
15	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
16	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	32	7.4
17	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	29.4
ERECTION WEIGHT [kg]	89.0
OVERALL WEIGHT [kg]	118.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW
EW16	1	BW
W17	1	BW
W18		FW
W19	1	BW
W20	1	BW
W21	3/4	BW
W22	1	BW
W23	1	BW
W24	1	BW
W25	1	BW
W26	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	74	BEVEL	BEVEL
B	1	136	BEVEL	BEVEL
C	1	109	BEVEL	BEVEL
D	1	100	BEVEL	BEVEL
E	1	300	BEVEL	BEVEL
F	1	200	BEVEL	BEVEL
G	1	125	BEVEL	BEVEL
H	1	1072	BEVEL	BEVEL
I	1	372	BEVEL	BEVEL
J	1	1229	BEVEL	BEVEL

SUPPORT LIST

PS-02016.1
PS-02017.1
PS-02017.3
PS-02017.4
PS-02017.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	3.8
B	2	4.0
C	2	3.9
D	4	4.8
E	6.75	6.1
F	6.75	6.8
MONT	1	89.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-189-03HSS-N
SK.093

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	17-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00093			SHEET / OF	1/1	REV.	02

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II				
PAINTING	SYSTEM 6A		BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N		THICKNESS [mm]	DESIGN	PRESS. 40	[barg]	TEMP. -29 / 80	[°C]	
HEAT TRACING	--			TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water	

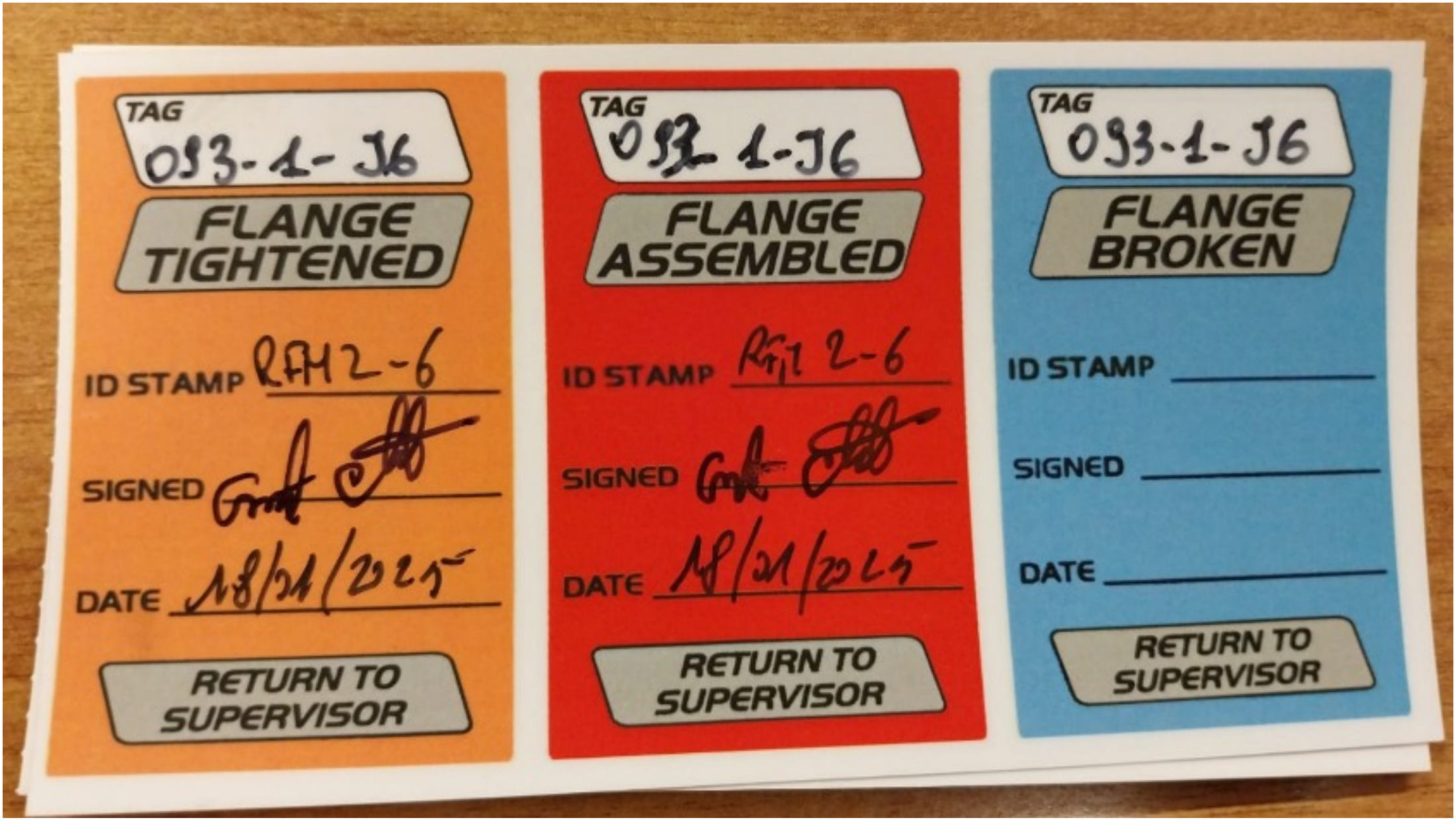
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

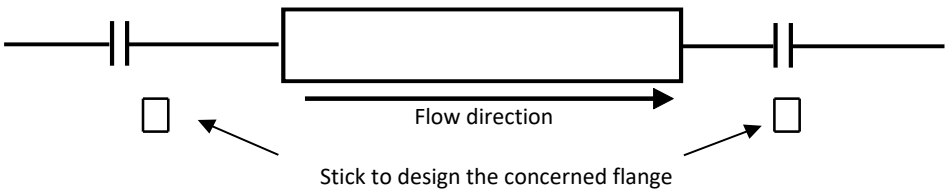
MASTER


TAG
093-1-J6
FLANGE TIGHTENED
ID STAMP RAH2-6
SIGNED
DATE 18/11/2025
RETURN TO SUPERVISOR
TAG
093-1-J6
FLANGE ASSEMBLED
ID STAMP RAH2-6
SIGNED
DATE 18/11/2025
RETURN TO SUPERVISOR
TAG
093-1-J6
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	093-1-J7	: Joint 093-1-J7			Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004045		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-018

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	48	159	48	95	158.8
2	48	159	48	95	158.8
3	48	159	48	95	158.8
4	48	159	48	95	158.8
5			48	95	158.8
6			48	95	158.8
7			48	95	158.8
8			48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

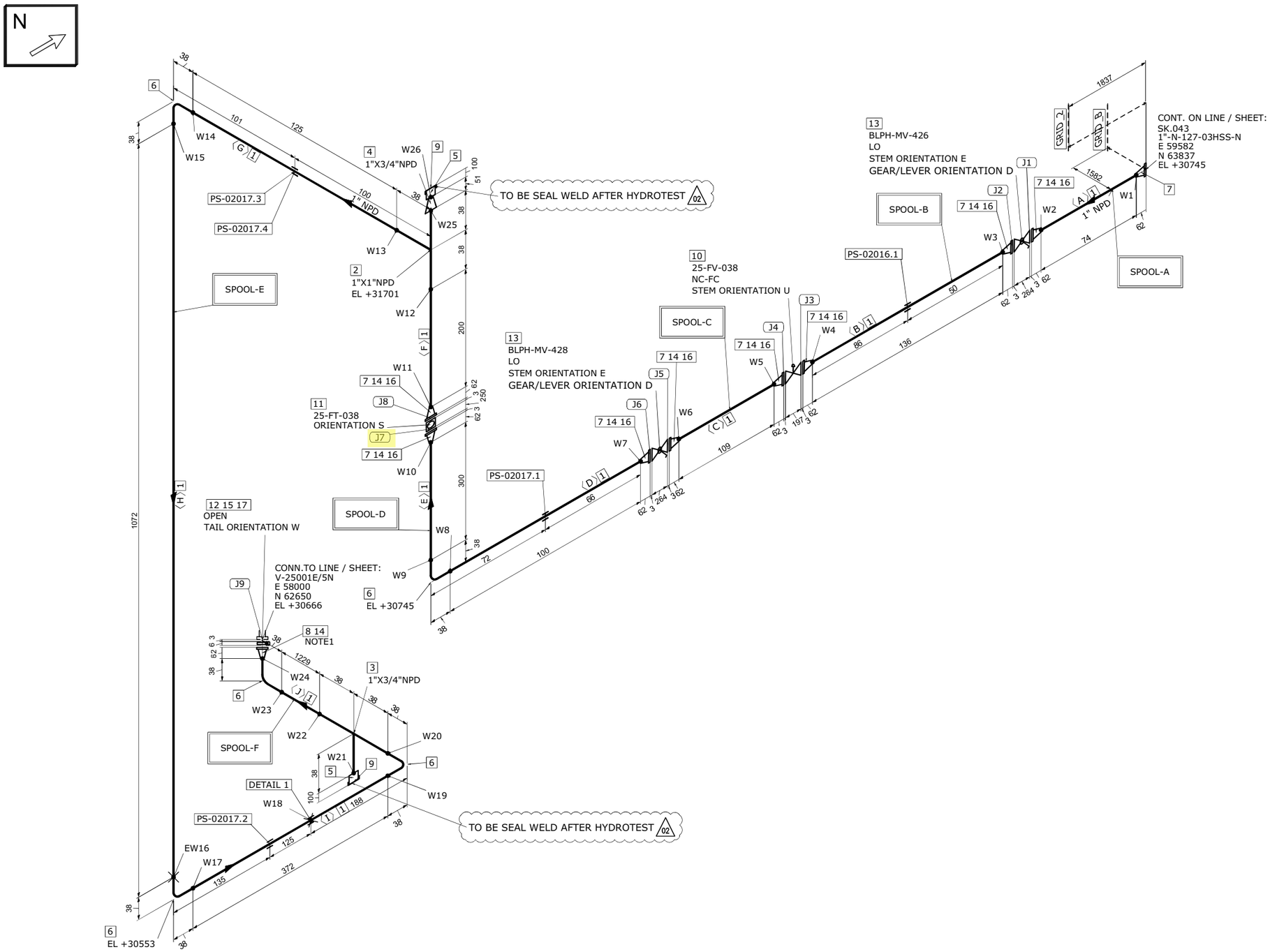
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

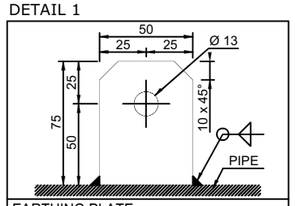
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-01-18	2025-01-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-18T08:33:19.115Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-01-21T08:30:04.184Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.7M	9.4
2	1X1	TEE0SS00550100	Tee ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
4	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
5	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	2	0.3
6	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
7	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	9	16.5
8	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
9	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	2	0.4
10	1		Control Valve - FLG 300 #RF	1	40.0
11	1		Flow Transmitter - ANSI - FLG 300#	1	12.0
12	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
13	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	2	27.0
14	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	9	0.6
15	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
16	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	32	7.4
17	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	29.4
ERECTION WEIGHT [kg]	89.0
OVERALL WEIGHT [kg]	118.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW
EW16	1	BW
W17	1	BW
W18		FW
W19	1	BW
W20	1	BW
W21	3/4	BW
W22	1	BW
W23	1	BW
W24	1	BW
W25	1	BW
W26	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	74	BEVEL	BEVEL
B	1	136	BEVEL	BEVEL
C	1	109	BEVEL	BEVEL
D	1	100	BEVEL	BEVEL
E	1	300	BEVEL	BEVEL
F	1	200	BEVEL	BEVEL
G	1	125	BEVEL	BEVEL
H	1	1072	BEVEL	BEVEL
I	1	372	BEVEL	BEVEL
J	1	1229	BEVEL	BEVEL

SUPPORT LIST

PS-02016.1
PS-02017.1
PS-02017.3
PS-02017.4
PS-02017.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	3.8
B	2	4.0
C	2	3.9
D	4	4.8
E	6.75	6.1
F	6.75	6.8
MONT	1	89.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-189-03HSS-N
SK.093

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	17-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00093			SHEET / OF	1/1	REV.	02

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II				
PAINTING	SYSTEM 6A		BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N		THICKNESS [mm]	DESIGN	PRESS. 40	[barg]	TEMP. -29 / 80	[°C]	
HEAT TRACING	--			TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water	

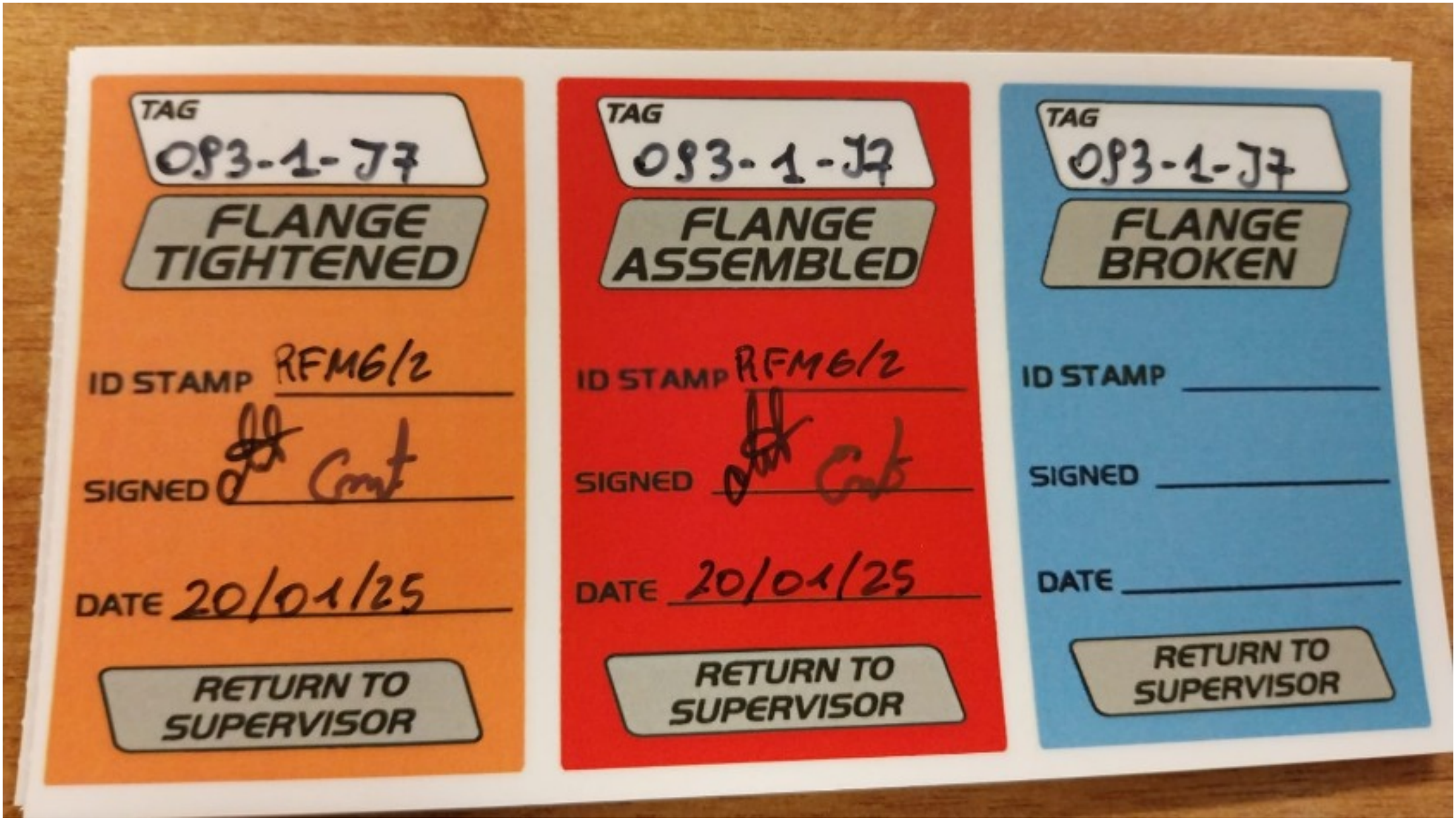
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

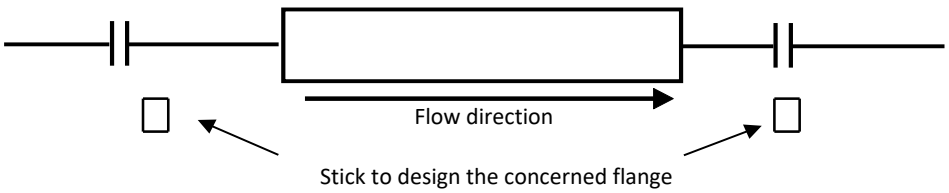
MASTER


TAG
083-1-J7
FLANGE TIGHTENED
ID STAMP RFM6/2
SIGNED
DATE 20/01/25
RETURN TO SUPERVISOR
TAG
083-1-J7
FLANGE ASSEMBLED
ID STAMP RFM6/2
SIGNED
DATE 20/01/25
RETURN TO SUPERVISOR
TAG
083-1-J7
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	093-1-J8	: Joint 093-1-J8			Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004046		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-018

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	48	160	48	95	158.8
2	48	160	48	95	158.8
3	48	160	48	95	158.8
4	48	160	48	95	158.8
5			48	95	158.8
6			48	95	158.8
7			48	95	158.8
8			48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

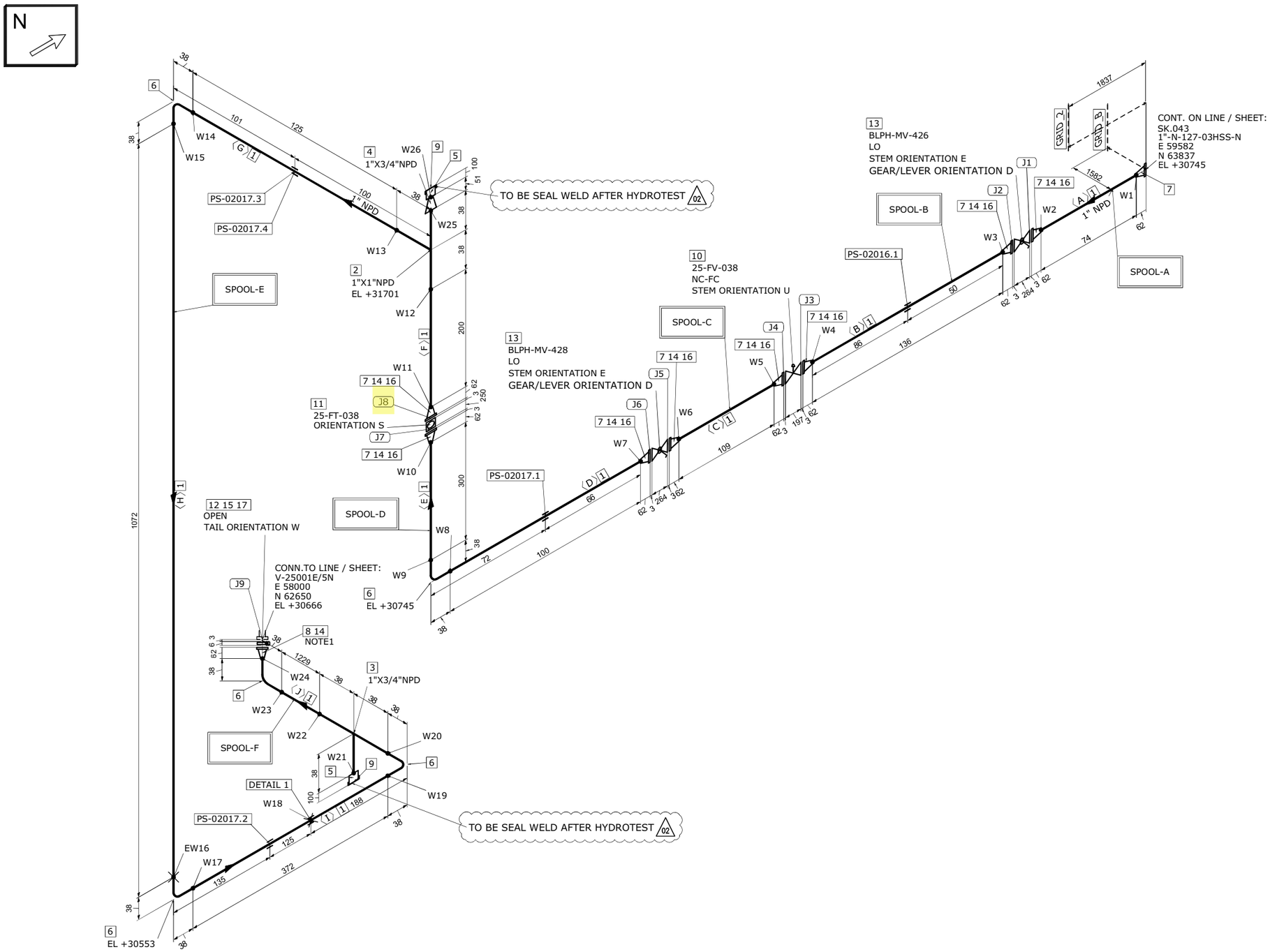
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

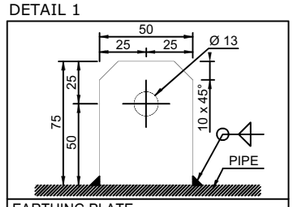
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-18	2025-01-24	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-18T08:33:34.645Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-24T08:21:47.128Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.7M	9.4
2	1X1	TEE0SS00550100	Tee ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
4	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
5	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	2	0.3
6	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
7	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	9	16.5
8	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
9	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	2	0.4
10	1		Control Valve - FLG 300 #RF	1	40.0
11	1		Flow Transmitter - ANSI - FLG 300#	1	12.0
12	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
13	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	2	27.0
14	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	9	0.6
15	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
16	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	32	7.4
17	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	29.4
ERECTION WEIGHT [kg]	89.0
OVERALL WEIGHT [kg]	118.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW
EW16	1	BW
W17	1	BW
W18		FW
W19	1	BW
W20	1	BW
W21	3/4	BW
W22	1	BW
W23	1	BW
W24	1	BW
W25	1	BW
W26	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	74	BEVEL	BEVEL
B	1	136	BEVEL	BEVEL
C	1	109	BEVEL	BEVEL
D	1	100	BEVEL	BEVEL
E	1	300	BEVEL	BEVEL
F	1	200	BEVEL	BEVEL
G	1	125	BEVEL	BEVEL
H	1	1072	BEVEL	BEVEL
I	1	372	BEVEL	BEVEL
J	1	1229	BEVEL	BEVEL

SUPPORT LIST

PS-02016.1
PS-02017.1
PS-02017.3
PS-02017.4
PS-02017.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	3.8
B	2	4.0
C	2	3.9
D	4	4.8
E	6.75	6.1
F	6.75	6.8
MONT	1	89.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-189-03HSS-N

SK.093

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	17-09-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00093	SHEET / OF	1/1
REV.	02				

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II				
PAINTING	SYSTEM 6A		BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N		THICKNESS [mm]	DESIGN	PRESS. 40	[barg]	TEMP. -29 / 80	[°C]	
HEAT TRACING	--			TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

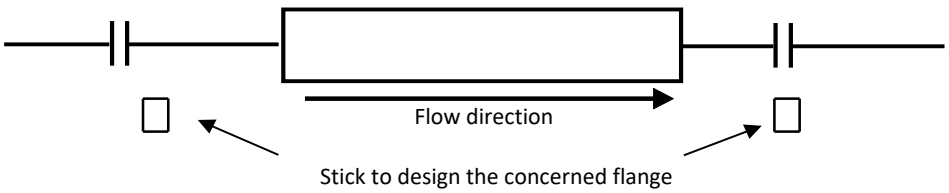
MASTER


TAG
093-1-J8
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 23/04/25
RETURN TO SUPERVISOR
TAG
093-1-J8
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 23/01/25
RETURN TO SUPERVISOR
TAG
093-1-J8
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	093-1-J9	: Joint 093-1-J9			Dwg	123A90-FDL-PP-DI-00093-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004047		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-018

EQUIPMENT TAG



Flange Type 300LB

Flange Size 1"

Gasket Type INSULATION KIT

Bolt tensioning/Torquing value 120

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools V030390 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

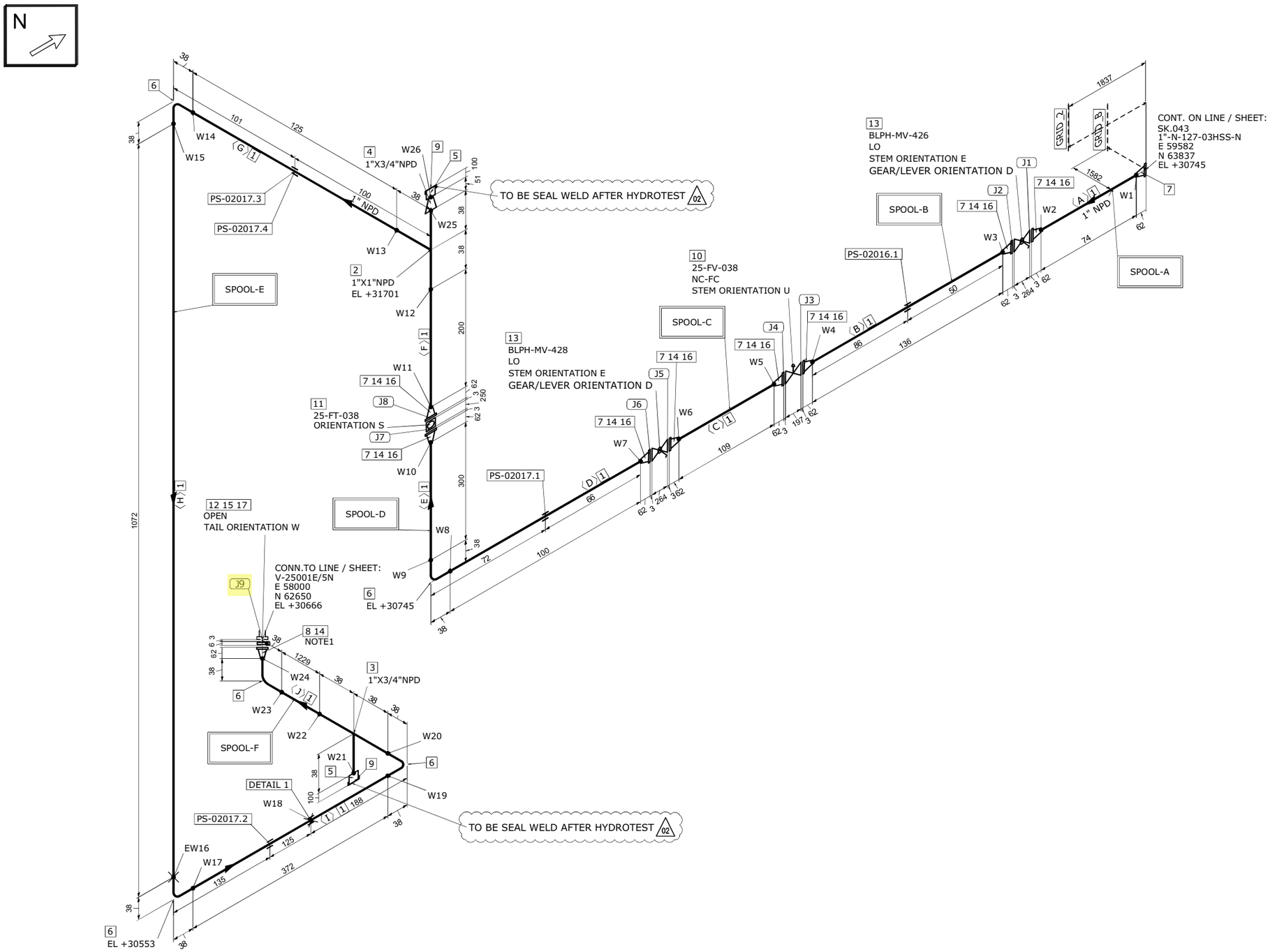
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

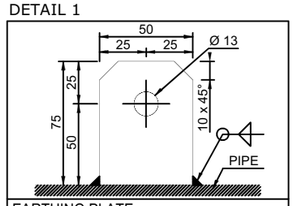
4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-18	2025-01-24	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-18T08:34:11.590Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-24T08:22:02.093Z	



DETAIL 1



EARTHING PLATE
DIMENSIONS: 75 x 50 x 5 thk. HOLE Ø13
MATERIAL: 316L STAINLESS STEEL
ORIENTATION: UP UNLESS OTHERWISE NOTED

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	3.7M	9.4
2	1X1	TEE0SS00550100	Tee ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	1	0.3
3	1X3/4	TER0SS0171013Q	Tee Reducing ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.3
4	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
5	3/4	N100SS02653Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A312 Gr.TP316/316L	2	0.3
6	1	E90RSS00670100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A403 Gr.WP316/316L	5	0.7
7	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	9	16.5
8	1	FLWDSS00770100	Flange WN For Jackscrews ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
9	3/4	CAPFSS00023Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F316/316L	2	0.4
10	1		Control Valve - FLG 300 #RF	1	40.0
11	1		Flow Transmitter - ANSI - FLG 300#	1	12.0
12	1	BSPESS01580100	Spectacle Blinds ASME B16.48 THRU BOLTED 300LB RF FPL ASTM A240 Gr.TP316/316L	1	0.5
13	1	VLBBNN07190100	Double Block & Bleed Valve API 6D FLG 300LB RF DA03C01RFH	2	27.0
14	1	GSW0GK11210100	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	9	0.6
15	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
16	5/8	SB20BO01870300	80 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	32	7.4
17	5/8	SB20BO04200300	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0

FABRICATION WEIGHT [kg]	29.4
ERECTION WEIGHT [kg]	89.0
OVERALL WEIGHT [kg]	118.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW
W5	1	BW
W6	1	BW
W7	1	BW
W8	1	BW
W9	1	BW
W10	1	BW
W11	1	BW
W12	1	BW
W13	1	BW
W14	1	BW
W15	1	BW
EW16	1	BW
W17	1	BW
W18		FW
W19	1	BW
W20	1	BW
W21	3/4	BW
W22	1	BW
W23	1	BW
W24	1	BW
W25	1	BW
W26	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	74	BEVEL	BEVEL
B	1	136	BEVEL	BEVEL
C	1	109	BEVEL	BEVEL
D	1	100	BEVEL	BEVEL
E	1	300	BEVEL	BEVEL
F	1	200	BEVEL	BEVEL
G	1	125	BEVEL	BEVEL
H	1	1072	BEVEL	BEVEL
I	1	372	BEVEL	BEVEL
J	1	1229	BEVEL	BEVEL

SUPPORT LIST

PS-02016.1
PS-02017.1
PS-02017.3
PS-02017.4
PS-02017.2

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	3.8
B	2	4.0
C	2	3.9
D	4	4.8
E	6.75	6.1
F	6.75	6.8
MONT	1	89.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
01	03-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	30-07-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-189-03HSS-N
SK.093

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	17-09-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00093			SHEET / OF	1/1	REV.	02

LINE DATA

NDT INSPECTION CATEGORY	1			PED CATEGORY	II				
PAINTING	SYSTEM 6A		BASE RAL RAL 9002	FLUID PHASE	GAS				
INSULATION	TYPE N		THICKNESS [mm]	DESIGN	PRESS. 40	[barg]	TEMP. -29 / 80	[°C]	
HEAT TRACING	--			TEST	PRESS. 60	[barg]	TEMP. AMB	MEDIUM Water	

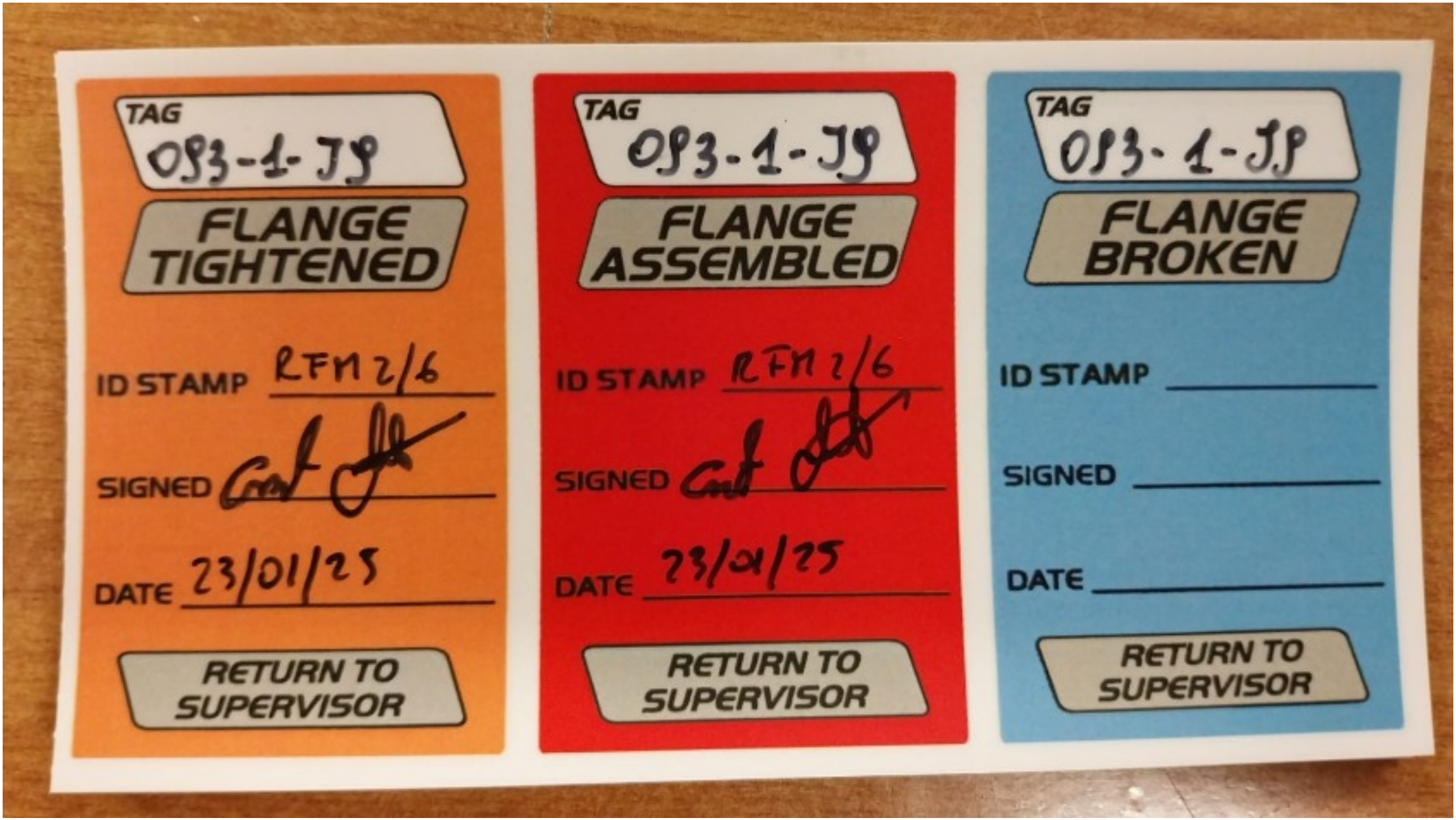
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

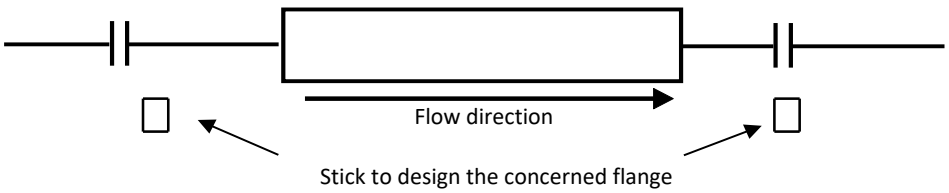
MASTER


TAG
083-1-JP
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 23/01/25
RETURN TO SUPERVISOR
TAG
083-1-JP
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 23/01/25
RETURN TO SUPERVISOR
TAG
083-1-JP
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	082-1-J1	: Joint 082-1-J1			Dwg	123A90-FDL-PP-DI-00082-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004259		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-056

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	T064079 / RA00598
Bolt tensioning/Torquing value	120		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

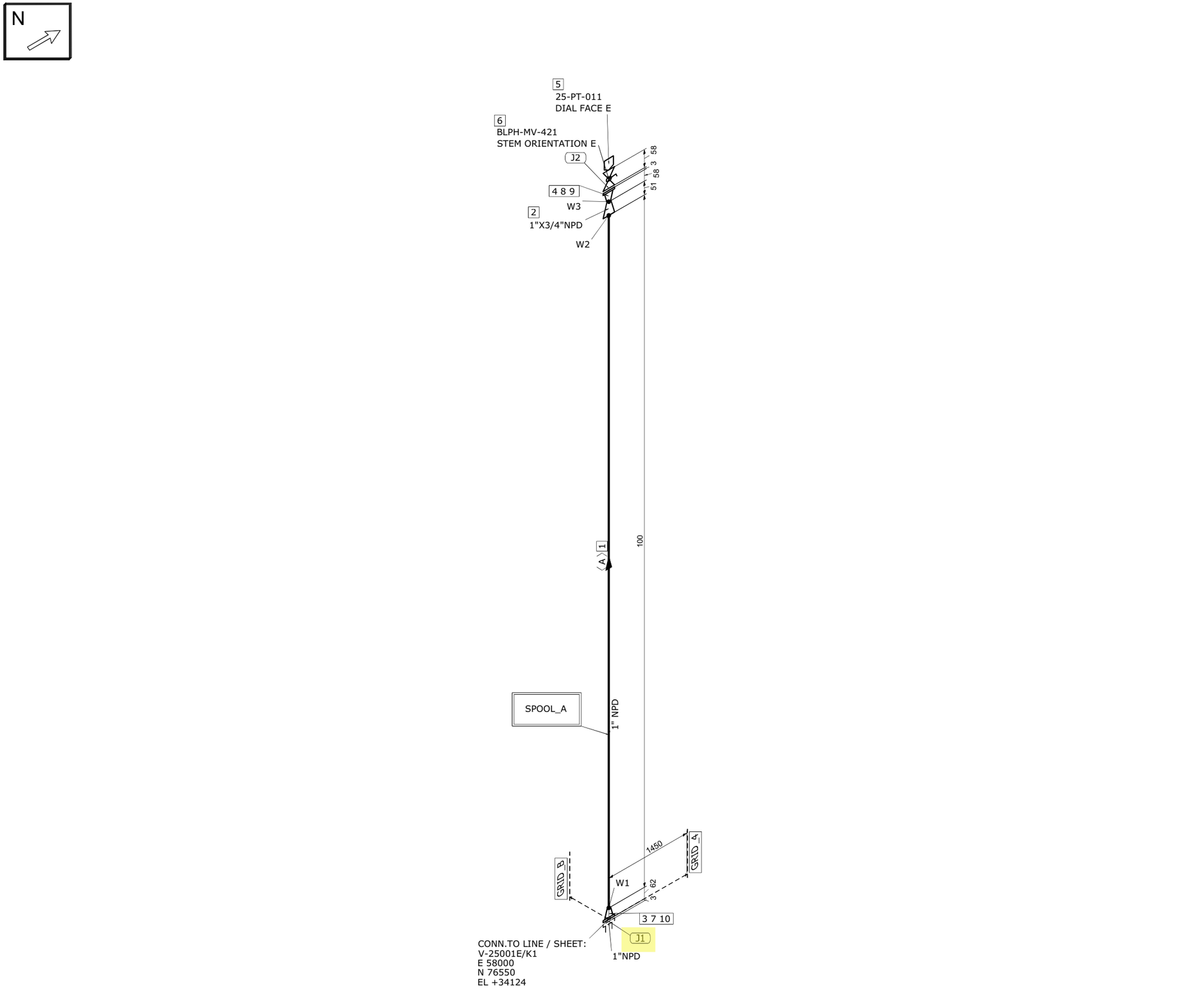
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM>(ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-02-05	2025-02-06	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:52:03.093Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-06T14:50:10.883Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	0.1M	0.3
2	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	3/4	FLW0SS01033Q00	Flange WN ASME B16.5 300LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter - Online	1	0.0
6	3/4X1/2	VLBMNN00013Q0H	Monoflange Double Block & Bleed Valve API 6D FLG x THRD-F NPT 300LB RF MD03C02YH	1	5.8
7	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
8	3/4	GSW0GK11203Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO07540300	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO00670300	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.9

FABRICATION WEIGHT [kg]	3.6
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	11.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2.75	3.6
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-178-03HSS-N

SK.082

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00082	SHEET / OF 1/2	REV. 00

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

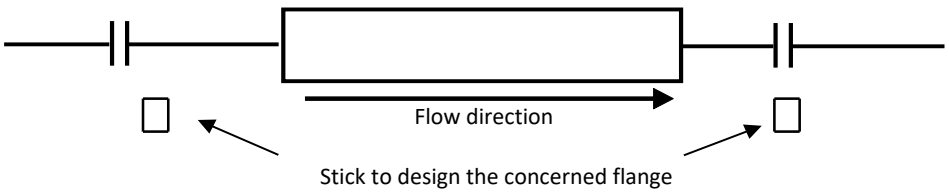
MASTER


TAG
082-1-J1
FLANGE TIGHTENED
ID STAMP RFM 3/9
SIGNED
DATE 04/02/23
RETURN TO SUPERVISOR
TAG
082-1-J1
FLANGE ASSEMBLED
ID STAMP RFM 3/9
SIGNED
DATE 04/02/23
RETURN TO SUPERVISOR
TAG
082-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	082-1-J2	: Joint 082-1-J2			Dwg	123A90-FDL-PP-DI-00082-01
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004260		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-056

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	T064079 / RA00598
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	48	160	48	95	158.8
2	48	160	48	95	158.8
3	48	160	48	95	158.8
4	48	160	48	95	158.8
5			48	95	158.8
6			48	95	158.8
7			48	95	158.8
8			48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.

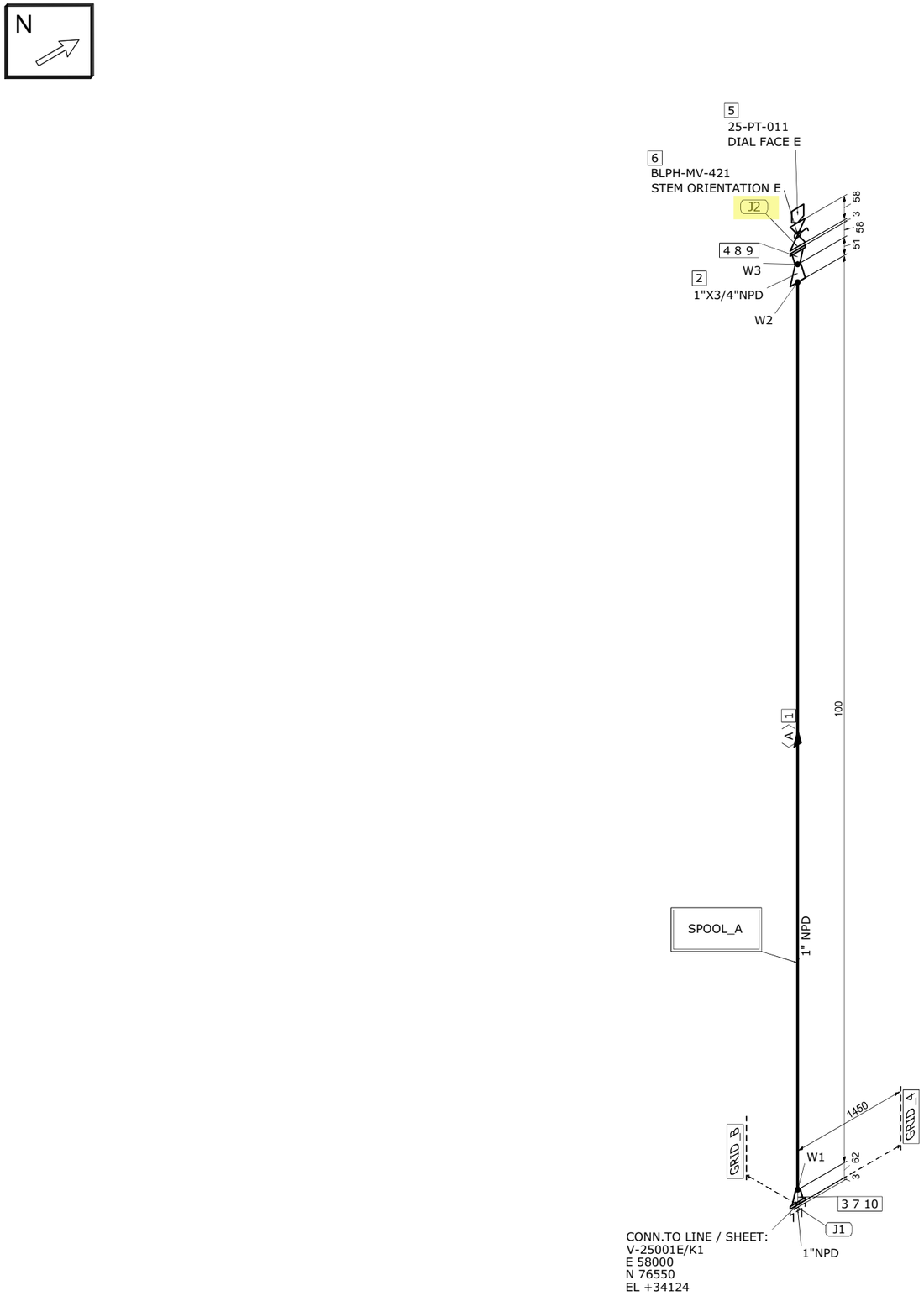
2 **Flange Face Check:** Both flanges clean and free from damage.

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.

4 **Alignment:** Check alignment according to code.

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-02-05	2025-02-06	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:52:14.428Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-06T14:50:21.511Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	0.1M	0.3
2	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	3/4	FLW0SS01033Q00	Flange WN ASME B16.5 300LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter - Online	1	0.0
6	3/4X1/2	VLBMNN00013Q0H	Monoflange Double Block & Bleed Valve API 6D FLG x THRD-F NPT 300LB RF MD03C02YH	1	5.8
7	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
8	3/4	GSW0GK11203Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO07540300	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO00670300	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.9

FABRICATION WEIGHT [kg]	3.6
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	11.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2.75	3.6
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-178-03HSS-N

SK.082

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00082	SHEET / OF 1/2	REV. 00

LINE DATA

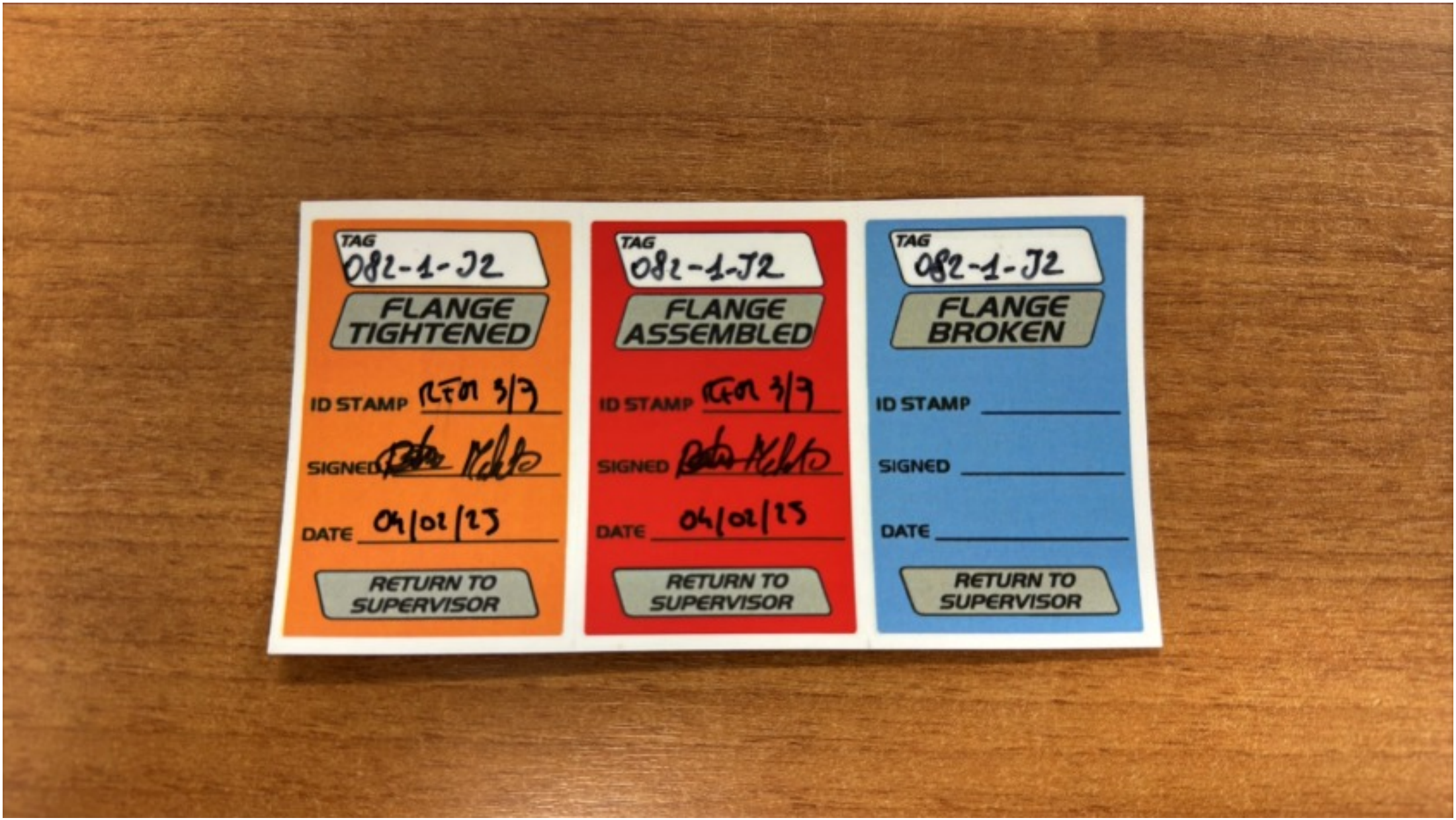
NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

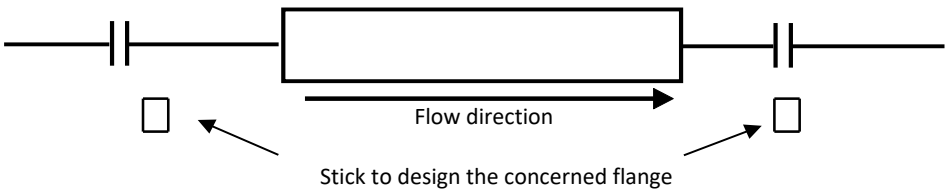
MASTER


TAG
082-1-J2
FLANGE TIGHTENED
ID STAMP RFOI 3/7
SIGNED
DATE 04/02/23
RETURN TO SUPERVISOR
TAG
082-1-J2
FLANGE ASSEMBLED
ID STAMP RFOI 3/7
SIGNED
DATE 04/02/23
RETURN TO SUPERVISOR
TAG
082-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	082-2-J3	: Joint 082-2-J3			Dwg	123A90-FDL-PP-DI-00082-02
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004261		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-056

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	
Bolt tensioning/Torquing value	120		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

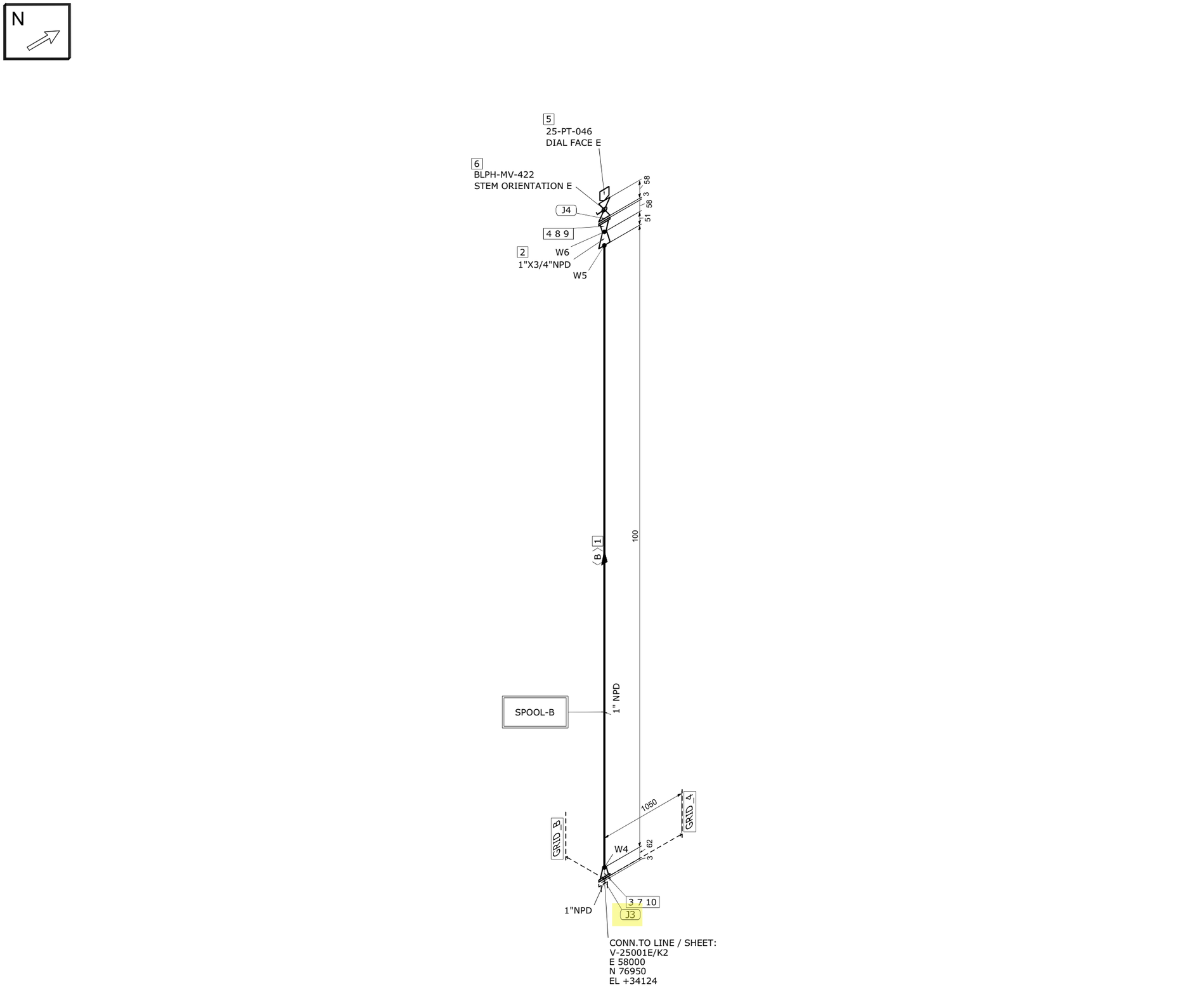
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-02-05	2025-02-06	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:52:25.292Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-06T14:50:37.807Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	0.1M	0.3
2	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	3/4	FLW0SS01033Q00	Flange WN ASME B16.5 300LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter - Online	1	0.0
6	3/4X1/2	VLBMNN00013Q0H	Monoflange Double Block & Bleed Valve API 6D FLG x THRD-F NPT 300LB RF MD03C02YH	1	5.8
7	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
8	3/4	GSW0GK11203Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO07540300	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO00670300	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.9

FABRICATION WEIGHT [kg]	3.6
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	11.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W4	1	BW
W5	1	BW
W6	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
B	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
B	2.75	3.6
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-178-03HSS-N

SK.082

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00082			SHEET / OF	2/2
						REV.	00

LINE DATA

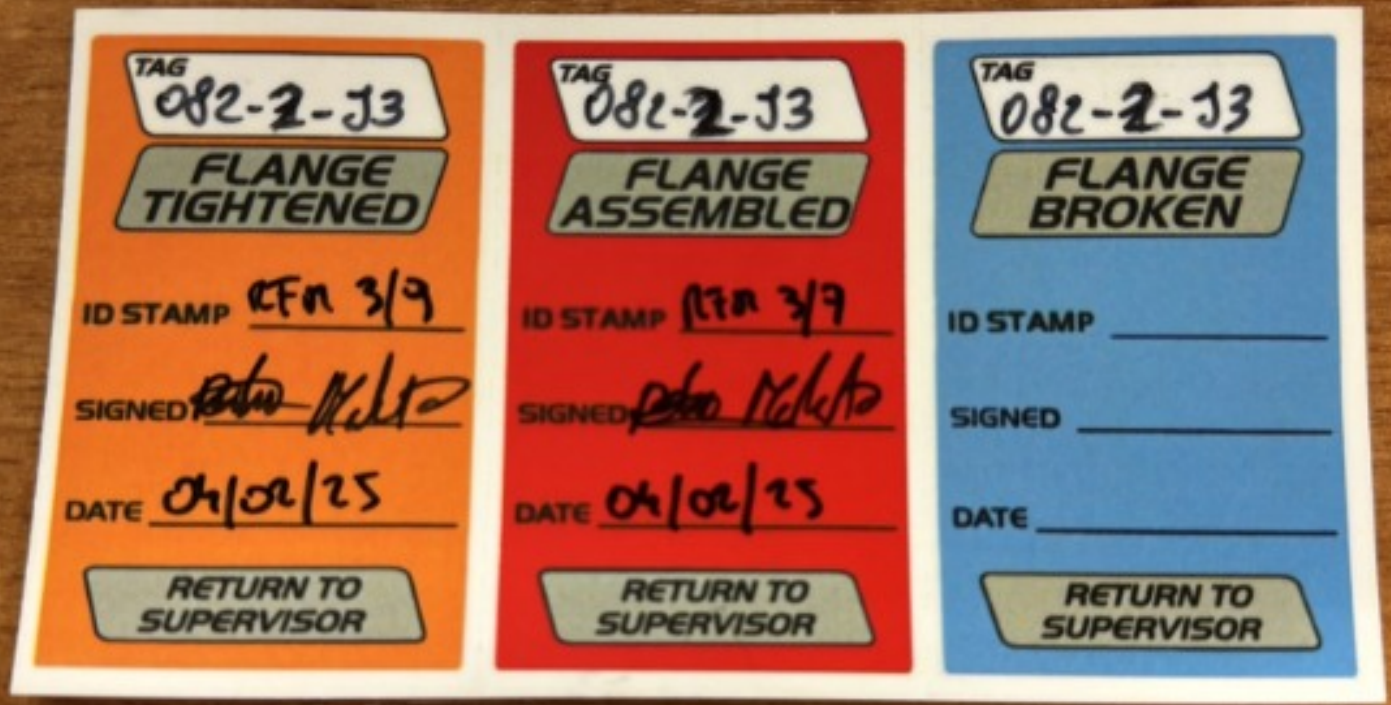
NDT INSPECTION CATEGORY	1		PED CATEGORY	II			
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]		
HEAT TRACING	N/A		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

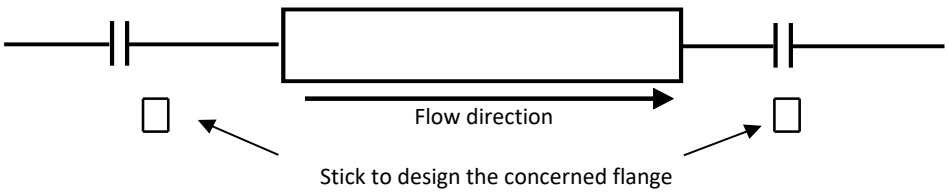
MASTER


TAG
082-Z-J3
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 04/02/25
RETURN TO SUPERVISOR
TAG
082-Z-J3
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 04/02/25
RETURN TO SUPERVISOR
TAG
082-Z-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	082-2-J4	: Joint 082-2-J4			Dwg	123A90-FDL-PP-DI-00082-02
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)			Module	UD
TASK	code	C10004262		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-056

EQUIPMENT TAG



Flange Type	300LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Spiral Wound Thk. 3.2 mm	**Used tools**	T064079 / RA00598
Bolt tensioning/Torquing value	158.8		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	48	160	48	95	158.8
2	48	160	48	95	158.8
3	48	160	48	95	158.8
4	48	160	48	95	158.8
5			48	95	158.8
6			48	95	158.8
7			48	95	158.8
8			48	95	158.8
9			48	95	158.8
10			48	95	158.8
11			48	95	158.8
12			48	95	158.8
13			48	95	158.8
14			48	95	158.8
15			48	95	158.8
16			48	95	158.8
17			48	95	158.8
18			48	95	158.8
19			48	95	158.8
20			48	95	158.8

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

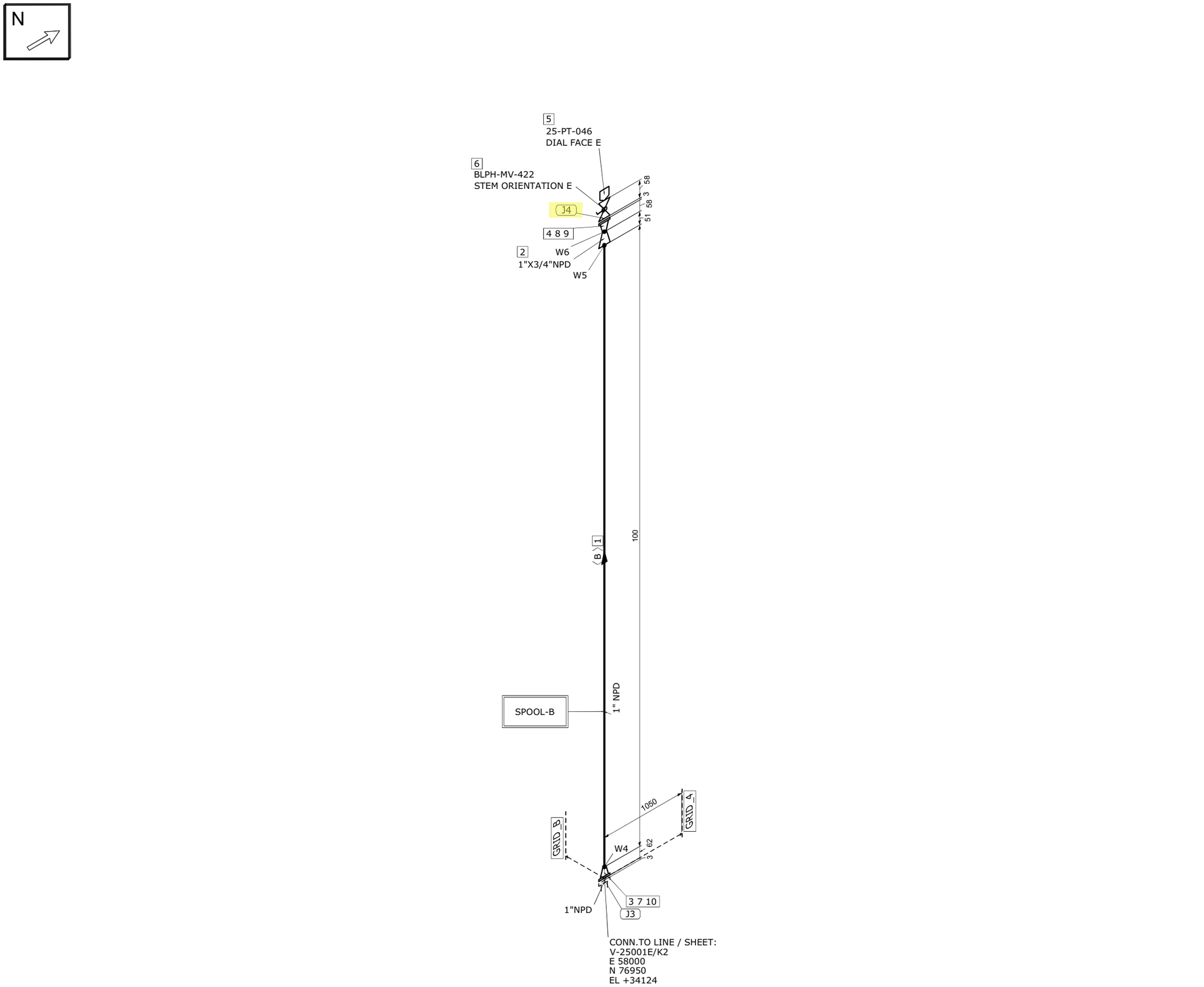
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM(ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-02-05	2025-02-06	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-05T05:52:34.841Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-02-06T14:50:47.405Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESS00480100	Pipe ASME B36.19M PE 3,38 SML ASTM A312 Gr.TP316/316L	0.1M	0.3
2	1X3/4	REC0SS0120013Q	Reducer Concentric ASME B16.9 BW 3,38x2,87 WRS ASTM A403 Gr.WP316/316L	1	0.1
3	1	FLW0SS03270100	Flange WN ASME B16.5 300LB RF 3,38 FRG ASTM A182 Gr.F316/316L	1	1.8
4	3/4	FLW0SS01033Q00	Flange WN ASME B16.5 300LB RF 2,87 FRG ASTM A182 Gr.F316/316L	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	1/2		Pressure Transmitter - Online	1	0.0
6	3/4X1/2	VLBMNN00013Q0H	Monoflange Double Block & Bleed Valve API 6D FLG x THRD-F NPT 300LB RF MD03C02YH	1	5.8
7	1	SPIKNN01420100	Insulation Kit Ends as per ASME B16.5 300LB RF	1	0.1
8	3/4	GSW0GK11203Q00	Gasket Spiral Wound Thk. 3.2 mm ASME B16.20 300LB RF GSK AISI 316 + GRAPHITE c/w INNER RING	1	0.1
9	5/8	SB20BO07540300	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.0
10	5/8	SB20BO00670300	95 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.9

FABRICATION WEIGHT [kg]	3.6
ERECTION WEIGHT [kg]	7.9
OVERALL WEIGHT [kg]	11.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W4	1	BW
W5	1	BW
W6	3/4	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
B	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
B	2.75	3.6
MONT	0	7.9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-HY-178-03HSS-N

SK.082

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00082			SHEET / OF	2/2	REV.	00

LINE DATA

NDT INSPECTION CATEGORY	1		PED CATEGORY	II				
PAINTING	SYSTEM 6A	BASE RAL RAL-9002	FLUID PHASE	Liquid				
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 40 [barg]	TEMP. -29 / 80 [°C]			
HEAT TRACING	N/A		TEST	PRESS. 60 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80019
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER


TAG
082-2-J4
FLANGE TIGHTENED
ID STAMP RFN 3/9
SIGNED
DATE 04/02/25
RETURN TO SUPERVISOR
TAG
082-2-J4
FLANGE ASSEMBLED
ID STAMP RFN 3/9
SIGNED
DATE 04/02/25
RETURN TO SUPERVISOR
TAG
082-2-J4
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	TP-006	: H2 Inlet System and Storage Vessel V-25001E	Dwg			
	S/Sys	25-05	: Hydrogen Storage Vessel E (V-25001E)	Module			
TASK	code	C10004893	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline	Piping	Form TMX25	Gross Air Leak Test

TEST PREPARATION					
1	EQUIPMENT REINSTATED	Yes	2	TEMPORARY EQUIPMENT REMOVED	Yes
3	CONFORMITY TO P&ID'S	Yes	4	FLANGE MANAGEMENT COMPLETED	Yes

DATA		
Design pressure:	Test pressure*:	Test medium:

TEST RESULTS		
Test date:	Test duration:	Witnessed by:
Test pressure-start:	Test pressure - finish:	

Note*: Pressure to be 7 bars or below if maximum operating pressure is lower

Comments: SEE ATTACHED TEST REPORT

Page 1/1	Performed by	☐ WITNESS ☉ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM (ROSETTI MARINO)	RM (ROSETTI MARINO)	
Name	Wolmer Borghi	Anthony Iveson	
Date	2025-02-26	2025-02-26	
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2025-02-26T15:10:24.420Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-02-26T16:07:27.932Z	

Logger protocol

Protocollo di acquisizione elenco dati

	Log no. *N. elenco dati*	123A90_GALT_05

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FOLZJ9
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:0E:DF:71)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:30:09
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	10:14:20 pm

Logger protocol

Protocollo di acquisizione elenco dati

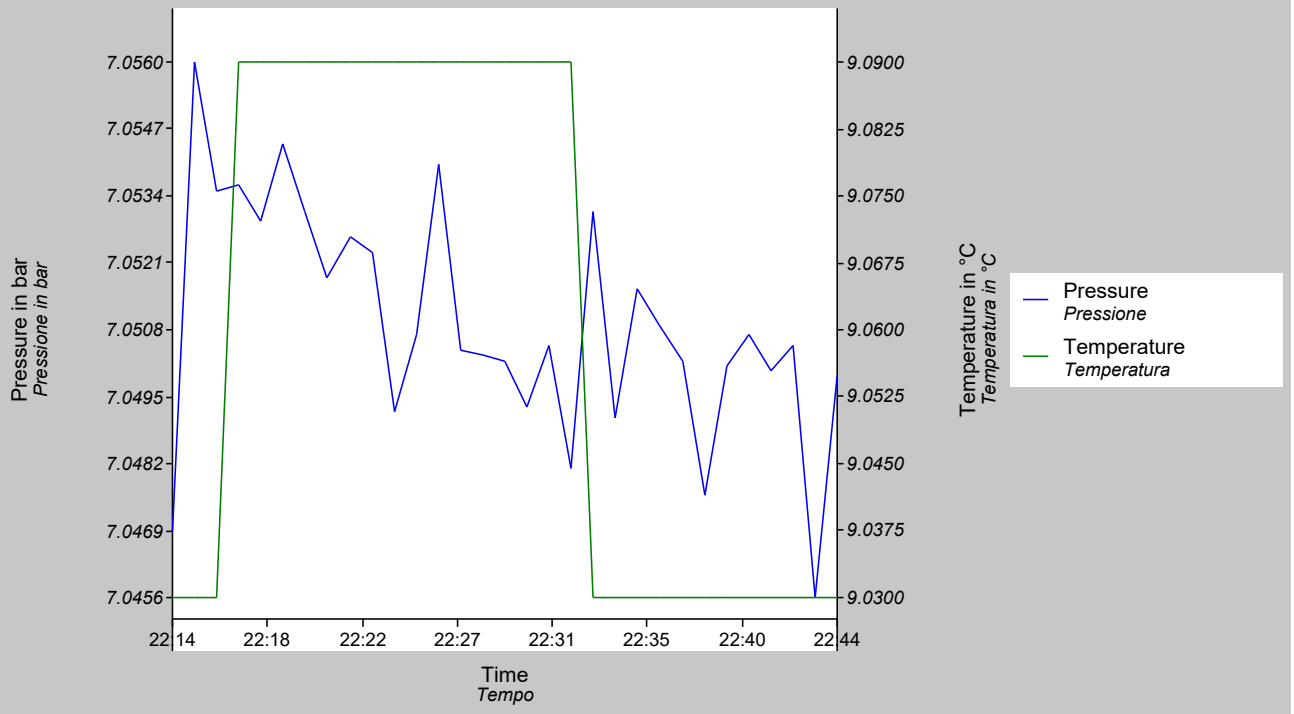
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90_GALT_05

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/22/2025 22:14:20.000	7.0469	9.0300
02/22/2025 22:15:20.000	7.0560	9.0300
02/22/2025 22:16:20.000	7.0535	9.0300
02/22/2025 22:17:20.000	7.0536	9.0900
02/22/2025 22:18:20.000	7.0529	9.0900
02/22/2025 22:19:20.000	7.0544	9.0900
02/22/2025 22:20:20.000	7.0531	9.0900
02/22/2025 22:21:20.000	7.0518	9.0900
02/22/2025 22:22:20.000	7.0526	9.0900
02/22/2025 22:23:20.000	7.0523	9.0900
02/22/2025 22:24:20.000	7.0492	9.0900
02/22/2025 22:25:20.000	7.0507	9.0900
02/22/2025 22:26:20.000	7.0540	9.0900
02/22/2025 22:27:20.000	7.0504	9.0900
02/22/2025 22:28:20.000	7.0503	9.0900
02/22/2025 22:29:20.000	7.0502	9.0900
02/22/2025 22:30:20.000	7.0493	9.0900

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90_GALT_05

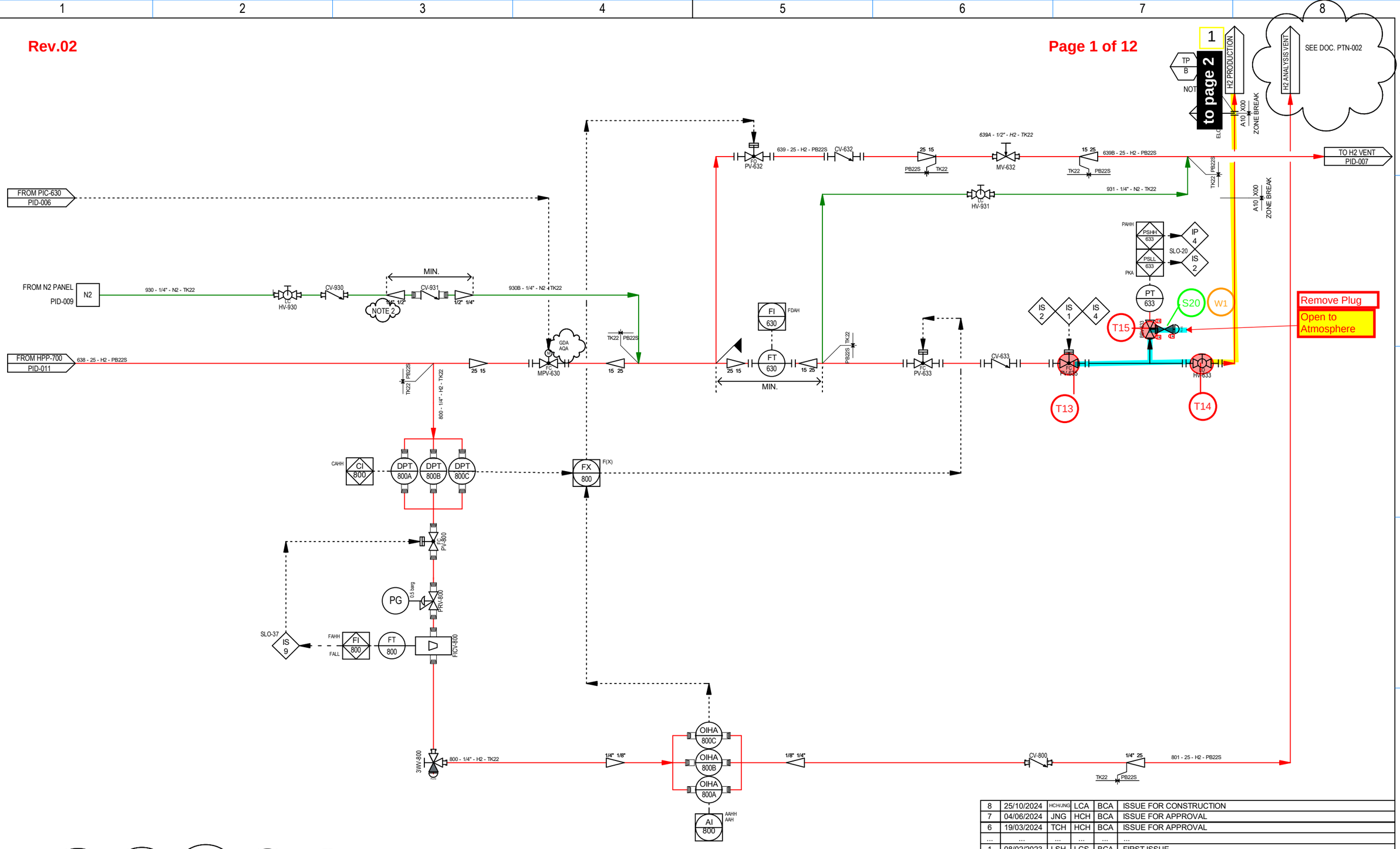
Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/22/2025 22:31:20.000	7.0505	9.0900
02/22/2025 22:32:20.000	7.0481	9.0900
02/22/2025 22:33:20.000	7.0531	9.0300
02/22/2025 22:34:20.000	7.0491	9.0300
02/22/2025 22:35:20.000	7.0516	9.0300
02/22/2025 22:36:20.000	7.0509	9.0300
02/22/2025 22:37:20.000	7.0502	9.0300
02/22/2025 22:38:20.000	7.0476	9.0300
02/22/2025 22:39:20.000	7.0501	9.0300
02/22/2025 22:40:20.000	7.0507	9.0300
02/22/2025 22:41:20.000	7.0500	9.0300
02/22/2025 22:42:20.000	7.0505	9.0300
02/22/2025 22:43:20.000	7.0456	9.0300
02/22/2025 22:44:20.000	7.0499	9.0300

Rev.02

Page 1 of 12



Rev.	Date	Ed.	Ver.	App.	Description
8	25/10/2024	HCH/JNG	LCA	BCA	ISSUE FOR CONSTRUCTION
7	04/06/2024	JNG	HCH	BCA	ISSUE FOR APPROVAL
6	19/03/2024	TCH	HCH	BCA	ISSUE FOR APPROVAL
...	...	...	...	...	...
1	08/02/2023	LSH	LCS	BCA	FIRST ISSUE

NOTES :

NOTE 1 : ALL OUTDOOR FLANGES MUST BE EQUIPPED WITH FLANGE GUARD DUCTED TO H2 VENT

NOTE 2 : DISSIMILAR TECHNOLOGY BETWEEN THE TWO CHECK VALVES/ CHECK VALVE SHALL MEET CLASS 1 REQUIREMENT

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System
and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

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Responsible dept.	Technical reference	Created by	Checked by	Approved by	Scale
PROCESS	C63-PID-001-008	HCH/JNG	LCA	BCA	1:1

Licensor: elogen — Empowering a sustainable world

Client:

Document type	Document status
P&ID	DETAILED DESIGN

Title, Supplementary title: H2 PANEL

Client reference: -

Rev.	Date of issue	Lang.	Page
8	25/10/2024	EN	8/16

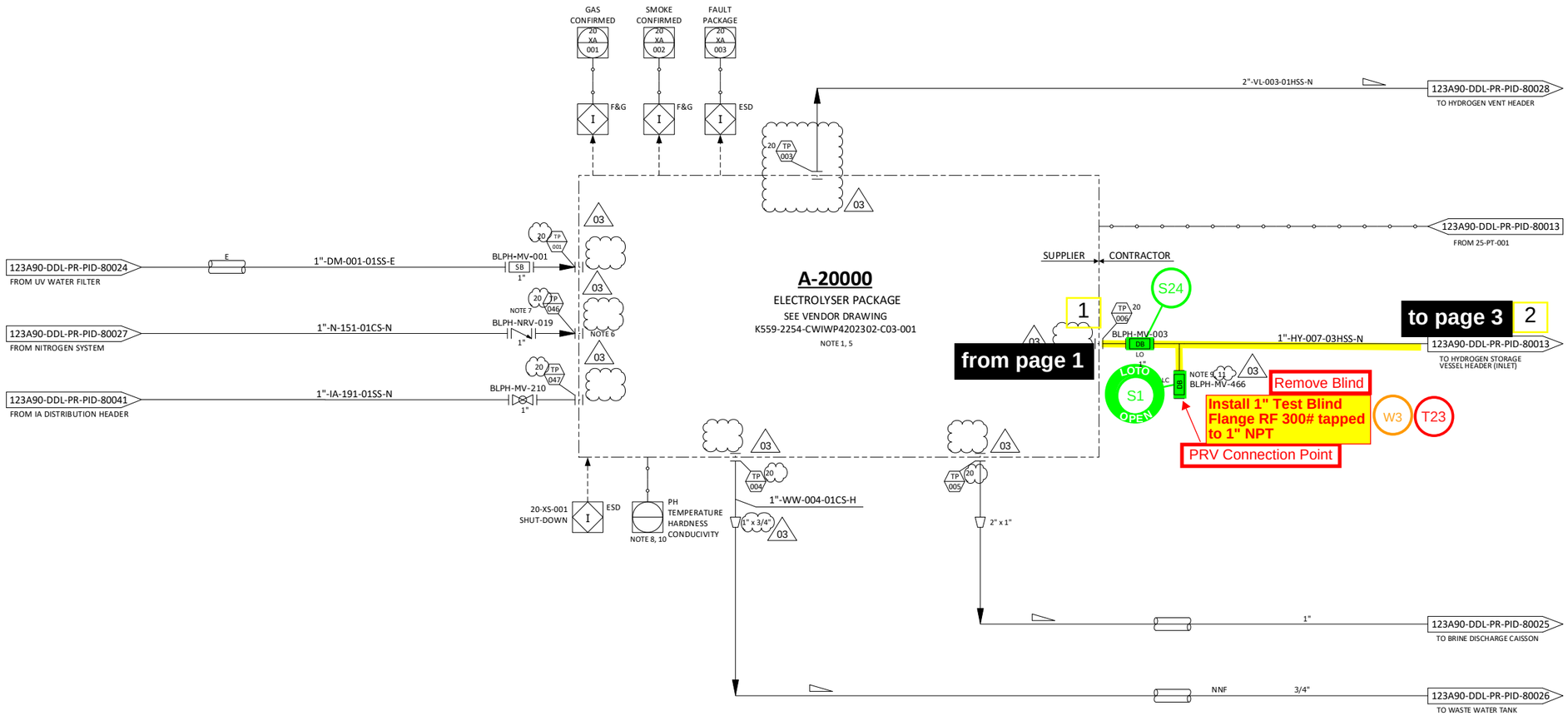
DRAWING NO. DRAWING_NO.

REV. REV

A-20000

ELECTROLYSER PACKAGE

DUTY: 2.5MW
DESIGN PRESSURE: 40 barg
DESIGN TEMPERATURE: 80 °C
H2 GENERATING CAPACITY: 500 Nm³/h



NOTES

1. PACKAGE SUPPLIED WITH POWER FROM THE BLPH ELECTRICAL SYSTEM.
2. DELETED.
3. DELETED.
4. DELETED.
5. ELECTROLYSER PACKAGE INCLUDES AN OXYGEN VENT LINE WHICH IS IN THE SCOPE OF SUPPLY OF THE ELECTROLYSER PACKAGE UP TO THE ATMOSPHERE. NO PHYSICAL INTERFACE IS PRESENT BETWEEN ELECTROLYSER PACKAGE AND CONTRACTOR ON THIS LINE.
6. AN ISOLATION VALVE DOWNSTREAM THE CHECK VALVE NRV-019 IS PROVIDED WITHIN THE PACKAGE A-20000.
7. CHECK VALVE NRV-019 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE ELECTROLYSER PACKAGE A-20000.
8. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
9. NITROGEN PURGING CONNECTION TO BE LOCATED AS CLOSE AS POSSIBLE TO MANUAL VALVE BLPH-MV-003.
10. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM CONTROL SYSTEM TO ELECTROLISER UCP IN ADDITION TO THE OTHER SOFTWARE SIGNALS. 03
11. MANUAL VALVE BLPH-MV-466 TO BE CONNECTED WITH MANUAL VALVE BLPH-MV-275 (INSTALLED ON NITROGEN GENERATION PACKAGE EXIT LINE) BY MEAN ON A FLEXIBLE HOSE DURING COMMISSIONING PHASE FOR PURGING OPERATION.

HOLDS

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System
and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
ELECTROLYSER PACKAGE

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80011		SHEET 001 / REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

***Valid only for Critical Valve Testing**

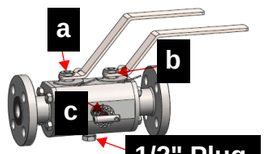
Example:

Txa - Open

Txb - Close

Sx - Open

1/2" Plug removed on bleed



Remove Plug

Open to Atmosphere

***

T8

01HSS VL-014

03HSS HY-143

1" BLPH-MV-212 FB-LO

W2 S23

W5 T25

Remove instrument

Connect 1/2" X 1" x-over NPT M x NPT M

Injection Point #1

25 PI 002 HH

NOTE 3 25 RO 024

Critical Valve Testing

25 XV 024

25 XY 024 IA

TYP.1 FB-FC

NOTE 1

S10

1" BLPH-MV-010 FB-LO

S29

I ESD

25 SDY 001

S

IA

LOTO S2 OPEN

25 SDV 001

FC

TYP.2

02

25 PT 002

LOTO S3 OPEN

INSTR. PIPING

BLPH-MV-013 3/4" FLG x 1/2" NPTF

1"-HY-143-03HSS-N

2 from page 2

123A90-DDL-PR-PID-80011 FROM ELECTROLYSER PACKAGE

1"-HY-007-03HSS-N

NOTE 4

N-SSH60-007-HY-1"

BLPH-MV-014 3/4" FLG x 1/2" NPTF

PIPING INSTR.

LOTO S28 OPEN

Remove instrument

Connect 1/2" NPT M X 1/4" NPT M OPPS and Instrumentation

T24

OPPS and Instrumentation Connection Point (Pressure Gauge & Recorder)

W4

25 PT 001

25 PI 001 H

123A90-DDL-PR-PID-80011 TO ELECTROLYSER PACKAGE

1"-VL-014-01HSS-N

123A90-DDL-PR-PID-80028 TO HYDROGEN VENT HEADER

to page 2 3

1"-HY-015-03HSS-N

123A90-DDL-PR-PID-80015 TO HYDROGEN STORAGE VESSEL A

to page 3 4

1"-HY-016-03HSS-N

123A90-DDL-PR-PID-80016 TO HYDROGEN STORAGE VESSEL B

to page 4 5

1"-HY-017-03HSS-N

123A90-DDL-PR-PID-80017 TO HYDROGEN STORAGE VESSEL C

to page 7 6

1"-HY-020-03HSS-N

123A90-DDL-PR-PID-80020 TO HYDROGEN STORAGE VESSEL F

02

to page 5 7

1"-HY-019-03HSS-N

123A90-DDL-PR-PID-80019 TO HYDROGEN STORAGE VESSEL E

to page 6 8

1"-HY-018-03HSS-N

123A90-DDL-PR-PID-80018 TO HYDROGEN STORAGE VESSEL D

02

NOTES

1. TIGHT SHUT OFF XV.
2. DELETED 02
3. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
4. PIPING CONNECTION TO 25-XV-003 SHALL BE AS CLOSE TO THE MANIFOLD AS POSSIBLE, TO ENSURE COMPLETE PURGING OF FEED LINE.

HOLDS

1. DELETED.

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSELS HEADER (INLET)

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80013	SHEET 001	REV. 02

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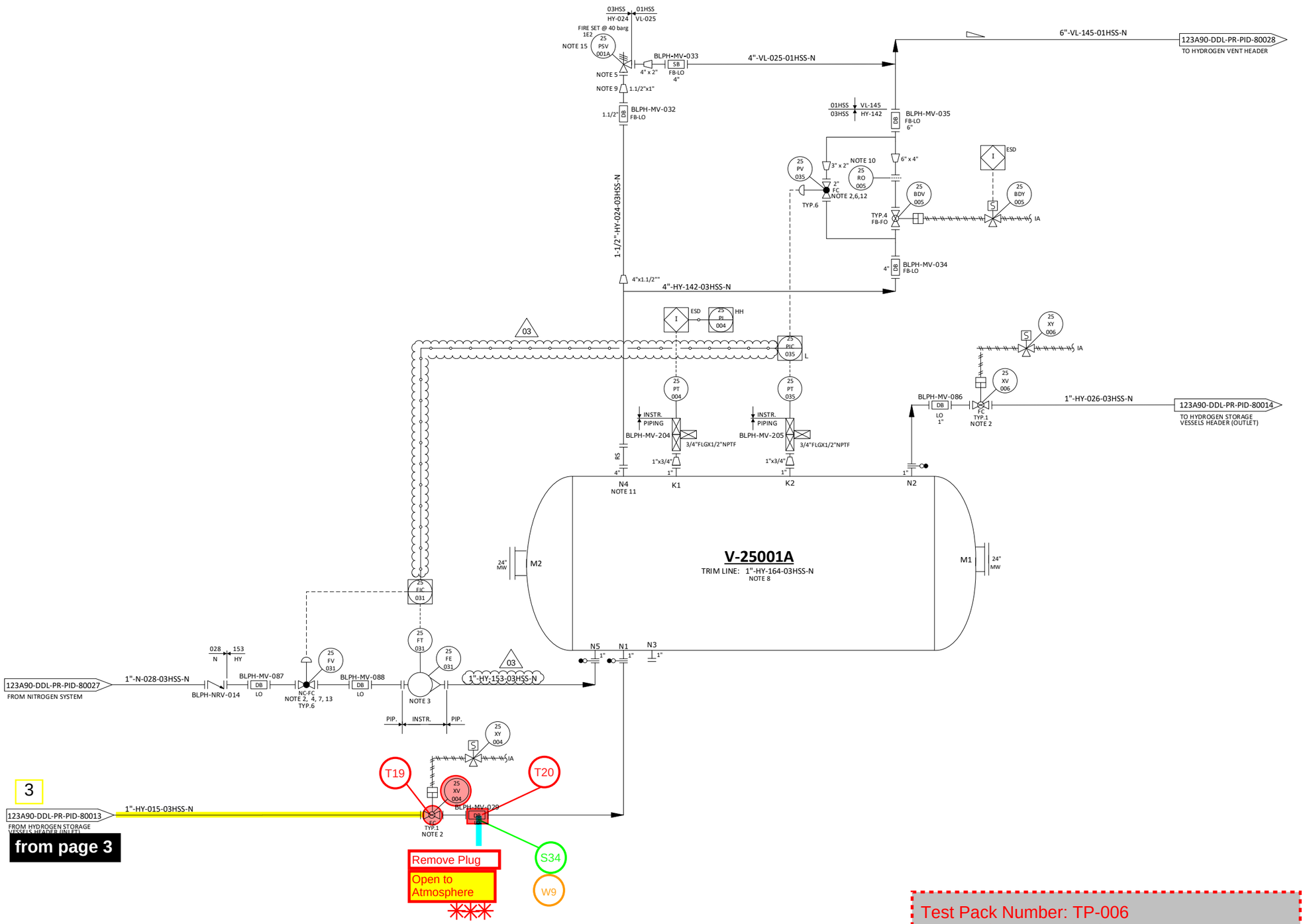
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 A

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg /AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-031) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. (03)
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-035 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-035 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. (03)
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-031 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-035 HAS FAILED TO CLOSE.
15. 25-PSV-001A SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL A

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80015	SHEET 001	REV. 03

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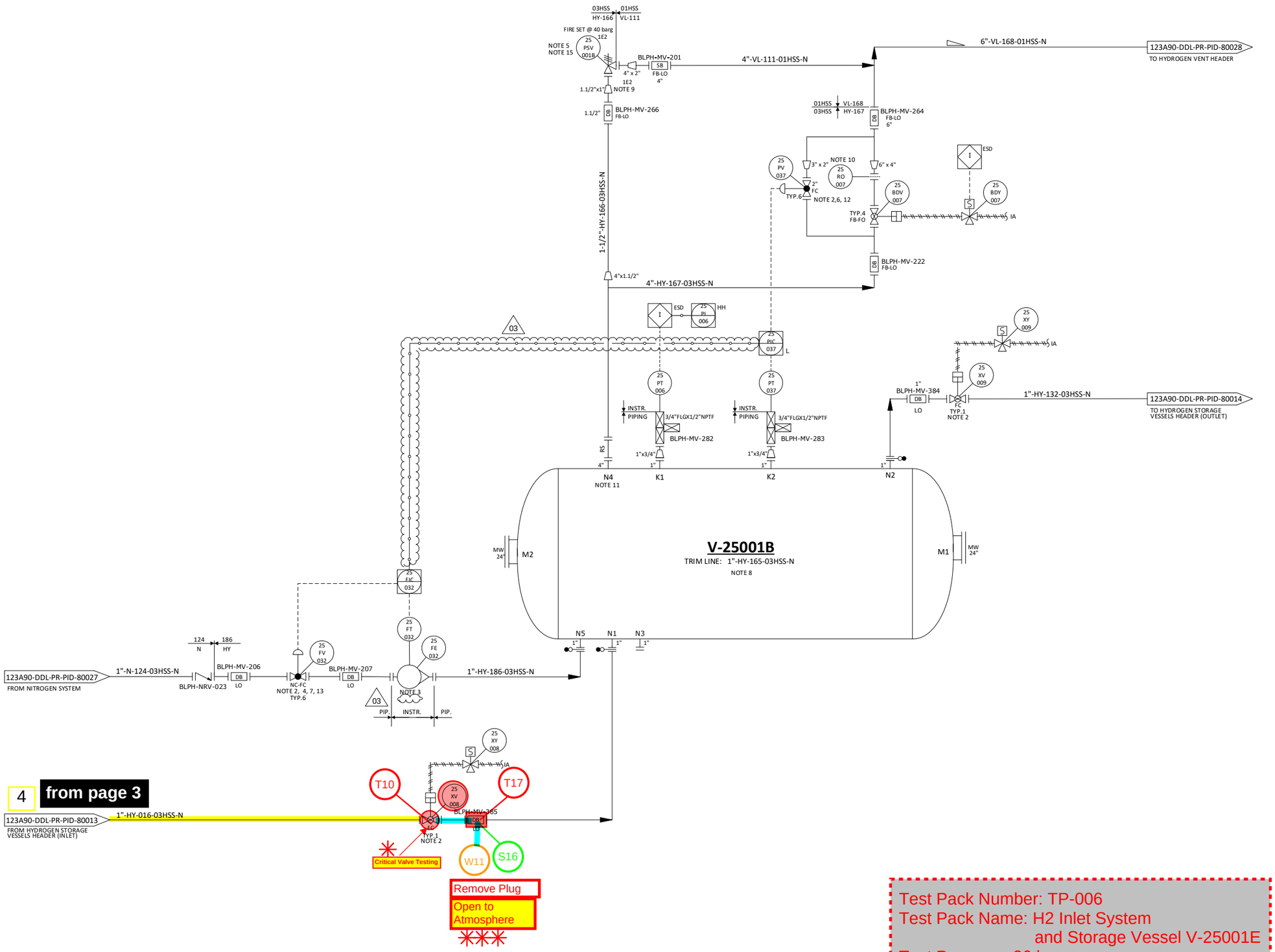
DRAWING NO. DRAWING_NO.

REV. REV

V-25001 B

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-032) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. (03)
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT "DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-037 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC."PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-037 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. (03)
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-032 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-037 HAS FAILED TO CLOSE.
15. 25-PSV-001B SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL B

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80016		SHEET 001	REV. 03

File Name : FILE_NAME

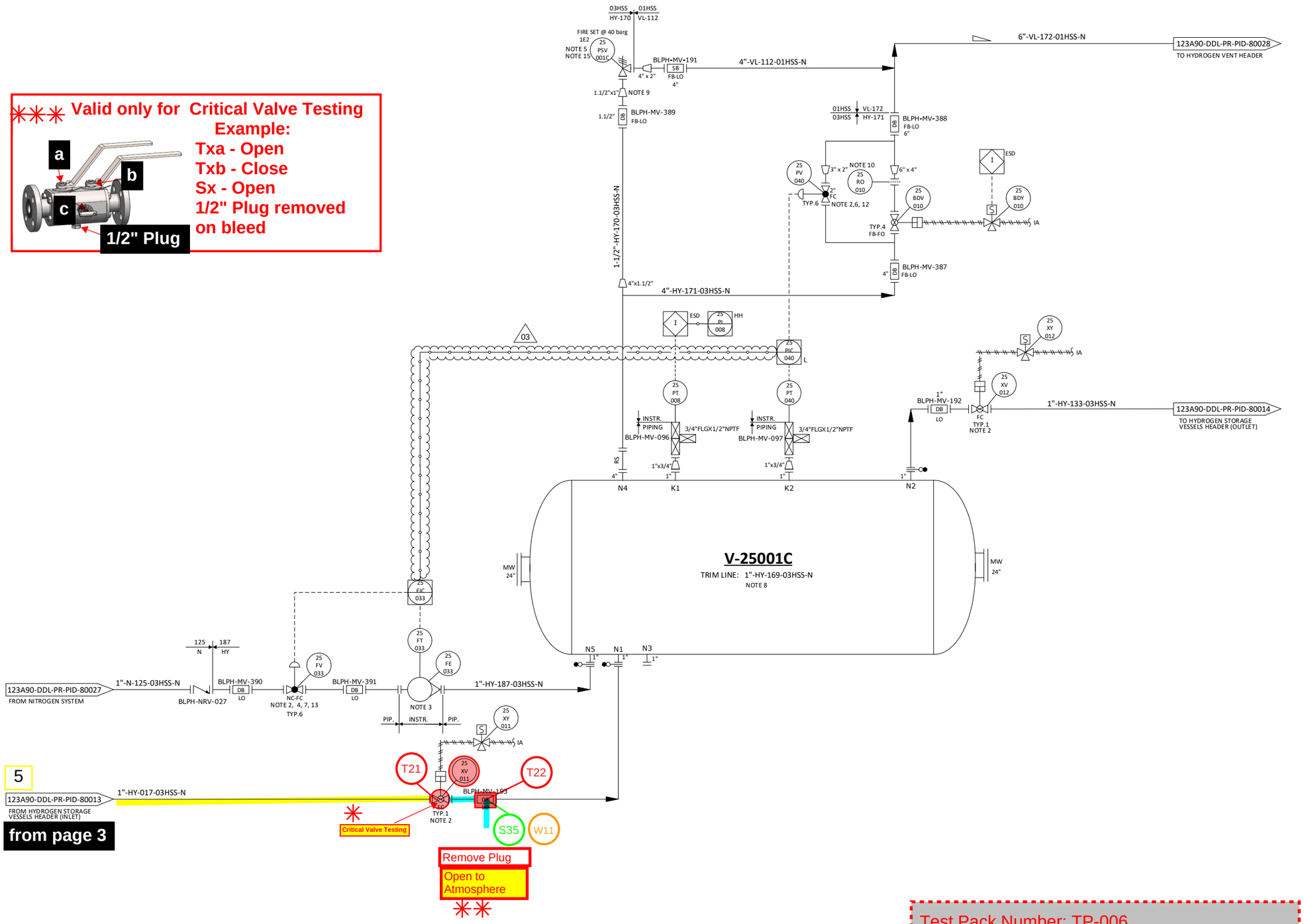
DRAWING_NO. DRAWING_NO.

REV. REV

V-25001_C

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



✳✳✳ **Valid only for Critical Valve Testing**

Example:
Txa - Open
Txb - Close
Sx - Open
1/2" Plug removed on bleed

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-033) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. (03)
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-040 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-040 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. (03)
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-033 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-040 HAS FAILED TO CLOSE.
15. 25-PS-V001C SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL C

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80017		SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

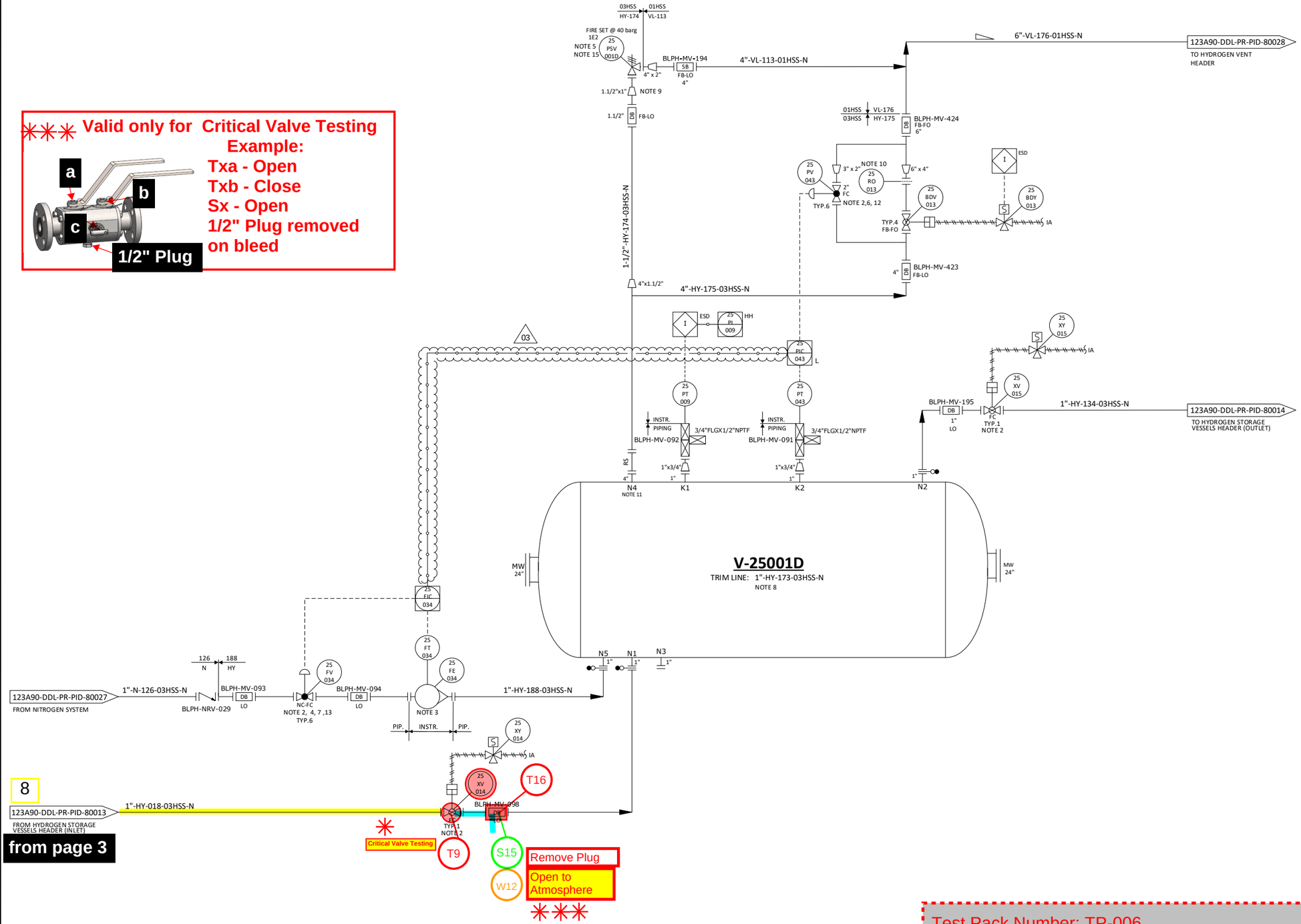
REV. REV

V-25001 D

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB

*** Valid only for Critical Valve Testing
Example:
Txa - Open
Txb - Close
Sx - Open
1/2" Plug removed on bleed



from page 3

NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-034) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-043 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-043 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-034 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-043 HAS FAILED TO CLOSE.
15. 25-PSV-001D SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL D

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80018	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING_NO. 123A90-DDL-PR-PID-80019

REV. 03

✳✳ Valid only for Critical Valve Testing

Example:
SXXa - open
SXXb - close
SXXc - open
1/2" Plug removed on bleed

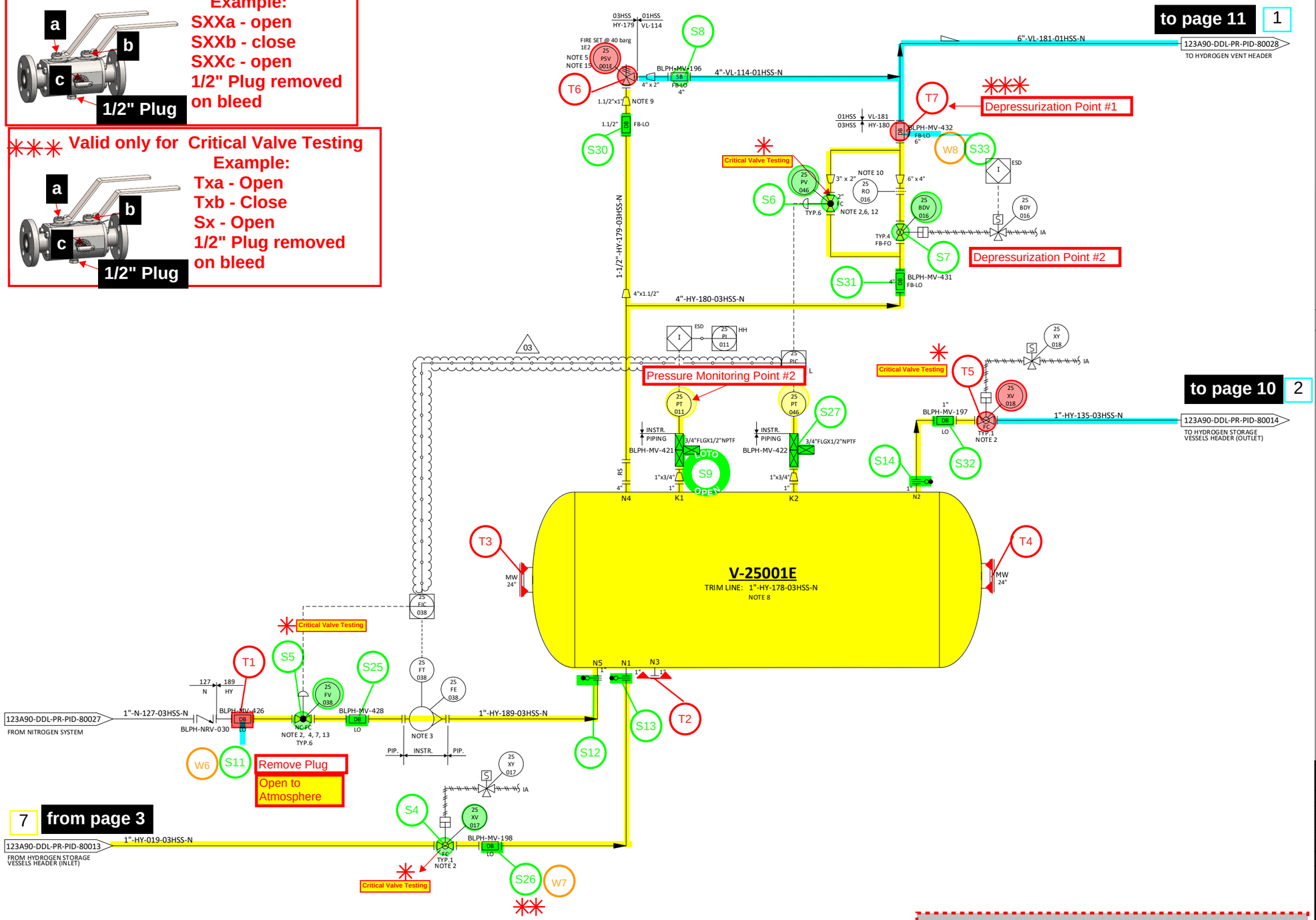
✳✳✳ Valid only for Critical Valve Testing

Example:
Txa - Open
Txb - Close
Sx - Open
1/2" Plug removed on bleed

V-25001 E

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS.
4. NITROGEN CONTROL VALVE (25-FV-038) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE. 03
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-046 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-046 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25-FV-038 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-046 HAS FAILED TO CLOSE.
15. 25-PSV-001E SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL E

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	

A1	DRAWING NO. 123A90-DDL-PR-PID-80019	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

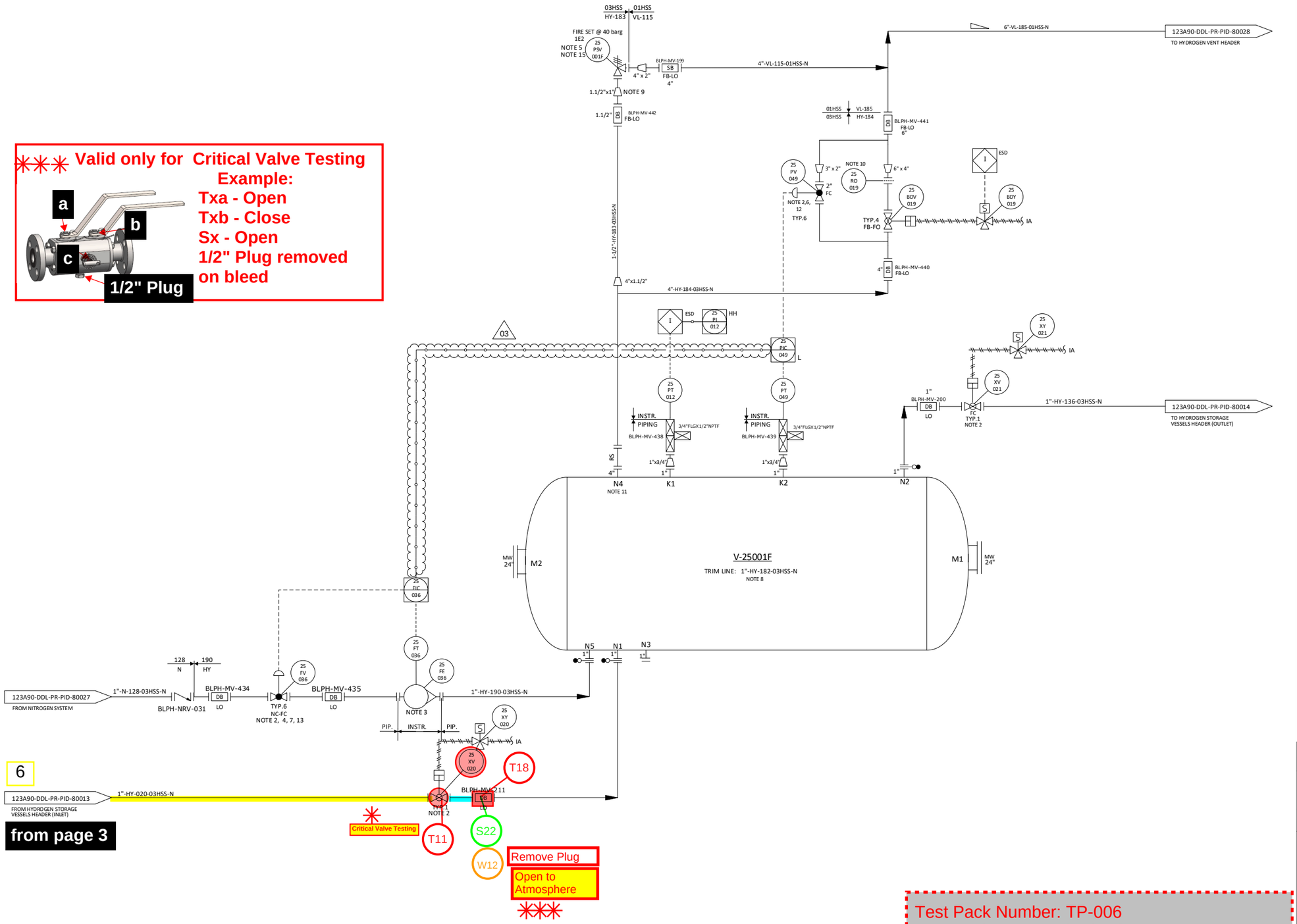
REV. REV

V-25001_F

HYDROGEN STORAGE VESSEL

SIZE : 2800 mm (ID) X 15500 mm (L T/T)
DESIGN P/T : 40 barg / -10 / 80 °C
MATERIAL : CARBON STEEL
OPERATING P/T : 30 barg / AMB

*** Valid only for Critical Valve Testing
Example:
Txa - Open
Txb - Close
Sx - Open
1/2" Plug removed on bleed



NOTES

1. DELETED.
2. TIGHT SHUT OFF VALVE.
3. VARIABLE AREA FLOWMETER TO BE INSTALLED VERTICALLY WITH DIRECTION OF FLOW UPWARDS. 03
4. NITROGEN CONTROL VALVE (25-FV-036) CAN NOT OPEN UNTIL THE PRESSURE WITHIN THE VESSEL IS BELOW THE NITROGEN SUPPLY PRESSURE.
5. ONE COMMON UNINSTALLED SPARE PSV FOR ALL VESSELS.
6. FOR PULSE PRESSURE PURGING OF VESSEL WITH HYDROGEN.
7. FOR FLOW PURGING OF VESSEL WITH NITROGEN.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 STORAGE, DOC. N. "123A90-DDL-MAC-DS-50027".
9. REDUCERS TO BE INSTALLED AS CLOSE TO PSV AS POSSIBLE.
10. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "RELIEF, VENT AND BLOWDOWN REPORT" DOC. N. "123A90-DDL-PR-RE-80030".
11. NOZZLE N4 TO BE INSTALLED AT MINIMUM DISTANCE FROM TANGENT LINE OF THE VESSEL (ON THE OPPOSITE SIDE OF N5 NOZZLE).
12. SOFTWARE INTERLOCK TO PREVENT 25-PV-049 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION AND PROCESS START-UP CHARGING MODE (SEE DOC. "PROCESS CONTROL LOGICS DESCRIPTION" N. 123A90-DDL-IN-RE-40095). CONTROL VALVE 25-PV-049 IS USED ONLY IN CASE OF VESSEL PURGING OR PROCESS START-UP CHARGING MODES. 03
13. SOFTWARE INTERLOCK TO PREVENT 25FV036 BEING OPENED OUTSIDE OF A PURGE CYCLE OPERATION.
14. A TIMER ALARM ON THE H2 PRESSURIZATION SECTION OF THE PURGE CYCLE IN THE CONTROL LOGIC IS PROVIDED TO DETERMINE IF THE PURGE VALVE 25-PV-049 HAS FAILED TO CLOSE.
15. 25-PSV-001F SIZED FOR FIRE.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.

Test Pack Number: TP-006
Test Pack Name: H2 Inlet System and Storage Vessel V-25001E
Test Pressure: 36 barg
Test Type: N2He 90% Design Pressure

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR HAZOP (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN STORAGE VESSEL F

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80020	SHEET 001	REV. 03

File Name : FILE_NAME

Section 11 MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE

NOT APPLICABLE

Section 12 FAT / VENDOR REPORTS

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-011	SHEET 1 of 5
		Data *Date* 22/10/2024	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

DESCRIZIONE DEL MATERIALE / *Material Description*

POS. *Item*	**QUANTITA'** *Quantity*	**DESCRIZIONE** *Description*	**Nr. TAG** *TAG No.*	**TIPO DI ISPEZIONE** / *Kind of Inspection*	**ESITO** / *Result*
10	1	Hydrogen Storage Vessel	V-25001E	Idrostatic test	**Satisfactory**

DOCUMENTI APPLICABILI / *Applicable Documents*

TITOLO DOCUMENTO / *Document Title*	**NUMERO DOCUMENTO** / *Document Number*	**REVISIONE** / *Revision*	**STATO DOCUMENTO** / *Document Status*
INSPECTION AND TEST PLAN – H2 STORAGE VESSEL	1723001756-QC-ITP-00002	04	AFC
NON DESTRUCTIVE EXAMINATION PROCEDURES (NDE) H2 STORAGE VESSEL	1723001756-NDT-PRO-00009	03	AFC

Remarks: NONE

DISTRIBUZIONE A: / *Distribution to:*

☒**GESTIONE FORNITURE** / *Supply Management Department*	☒**CAPO COMMESSA** / *Project Manager*
☒**PRODUZIONE** / *Production*	☒**FORNITORE** / *Supplier*
☒**PPLM** / *Project Procurement & Logistic Manager*	☒**P.Q.M.**
☒**MAGAZZINO** / *Warehouse*	☒**P.E.M.**

ATTIVITA' ESEGUITE / *Activities Carried Out*

A - INTRODUZIONE / *Preliminary Introduction*

The present report refers to the inspection visit carried out 22/10/2024 at Brembana & Rolle S.p.A. factory, located in Via delle Indistrie, 35 – 35020 Albignasego (PD) , ITALY.
The following inspection activities were witnessed by Rosetti Marino and Crosswind as specified in the Notification of Inspection (Noi Nr: 31 rev.0) step 79, step 80 of ITP and Factory acceptance test procedure.
Attendees the test:

Cerato Alex (Rosetti Marino)
Michele Rampazzo (Brembana & Rolle S.p.A.)
Luigi D'Alessandro (CW)

Area of concern
None

B –SCOPO DELL'ISPEZIONE / *Scope of Inspection*

DESCRIZIONE DEI TEST PRESENZIATI / *Description of witnessed tests*	**ESITO /** *Result*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-011	SHEET 2 of 5
		Data *Date 22/10/2024*	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

As per Inspection Notification follow the activities: • NDE Test VT MT after Hydrostatic Test • Check Documentation	**Satisfactory**

C –DETTAGLIO DEGLI STRUMENTI UTILIZZATI PER TEST E ISPEZIONE / *Details of Inspection and Test Instruments used*

NOME DELLO STRUMENTO *Equipment name*	**PRODUTTORE** *Manufacturer*	**MODELLO** *Model*	**PROSSIMA TARATURA** *Next calibration*
MAGNETIC YOKE	**C.G.M**	**TWIST 24/0/24 sn. 20164/1**	**-------**
RADIOMETER UVA	**Delta Ohm S.r.l.**	**HD2302.0+LP471 UVA**	**10.11.2024**
LUXMETER	**Delta Ohm S.r.l.**	**HD2302.0+LP471 PHOT**	**10.11.2024**
LIFT TEST 10 LB			
PIE GAUGE			

Remarks:
None.

D –ALLEGATI / *Attachments (***CERTIFICATI E TEST REPORT** */ Certificates and Test Reports)*

NUMERO DOCUMENTO / *Document Number*	**DESCRIZIONE** / *Description*	**TIPO** / *Type*	**NR. PAGINE** / *No. Pages*
PRO NDT 16-1116	CALIBRATION REPORT PIE GAUGE	CERTIFICATE	2
PRO NDT 21-PC10 09	CALIBRATION REPORT LIFT TEST 10 LB	CERTIFICATE	2
2023111023b	CERTIFICATE OF CALIBRATION RADIOMETER	CERTIFICATE	3
1723001756-QC-ITP-00002	INSPECTION AND TEST PLAN – H2 STORAGE VESSEL	ITP signed	16
23096- SNE VT 04	VISUAL EXAMINATION REPORT	REPORT	1
23096-01-SNE-MTH-1	MAGNETIC PARTICEL EXAMINATON REPORT	REPORT	1

Remarks:
None.

E – DETTAGLI ED ESITO DELL'ISPEZIONE */ Details and Results of Inspection*

NDE VT e MT after Hydrostatic test Inspection and check completed with satisfactory results

F – CONCLUSIONI */ Conclusions*

Test Activities Carried Out With Positive Results.

G – PUNTI IRRISOLTI */ Outstanding points*

None.

H – STATO PACKING LIST / *Packing List Status*	☐ **EMESSO** / *Issued*	☒ **NON EMESSO** / *Not Issued*	DD/MM/YYYY **ULTIMA DATA UTILE** / *Last Date*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	INSPECTION REPORT	**Report No.** IR-BRE-1756-011	SHEET 3 of 5
		Data *Date 22/10/2024*	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

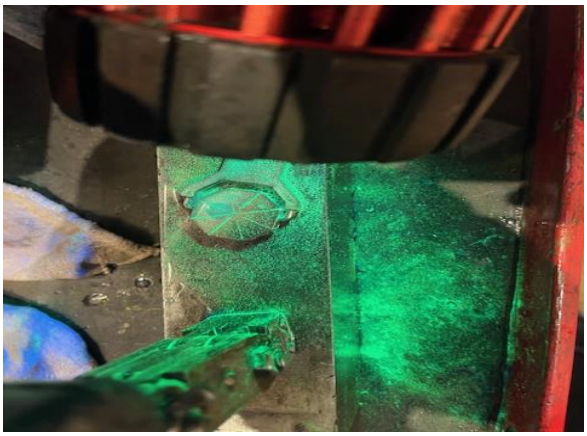
PUNCH LIST REPORT: VEDI ALLEGATO N° / *Refer to Attachment n° NOT APPLICABLE*

REPORT FOTOGRAFICO (SE PRESENTE) / *Digital Pictures (if any)*

Overview Vessel

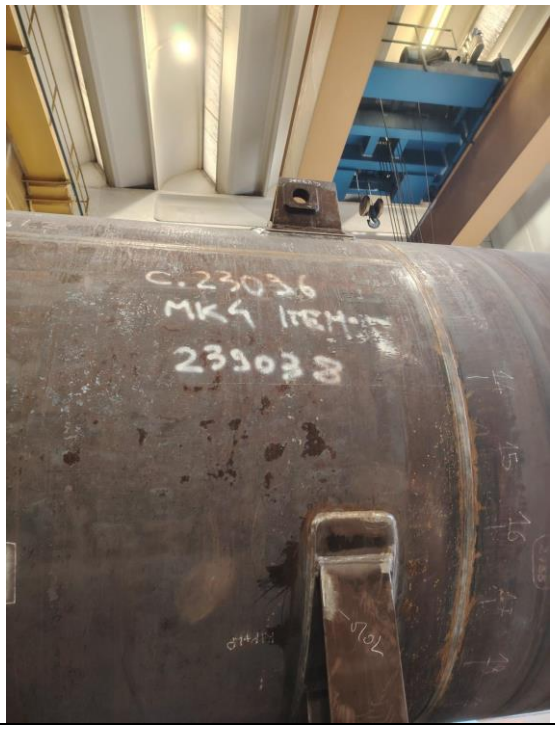


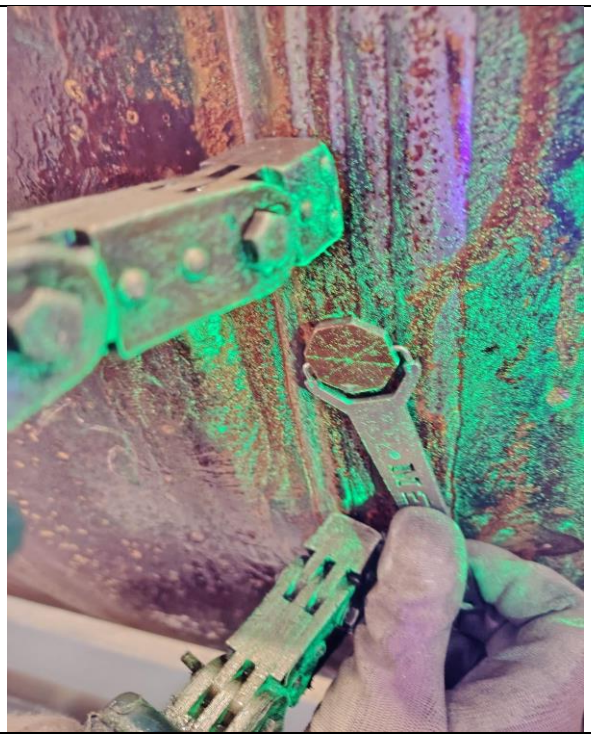




L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.





NON VALIDO PER IL RILASCIO DELLA FORNITURA / *It is not valid for the supply's release*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-010	SHEET 1 of 5
		Data *Date 21/10/2024*	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

DESCRIZIONE DEL MATERIALE / *Material Description*

POS. *Item*	**QUANTITA'** *Quantity*	**DESCRIZIONE** *Description*	**Nr. TAG** *TAG No.*	**TIPO DI ISPEZIONE** / *Kind of Inspection*	**ESITO** / *Result*
10	1	Hydrogen Storage Vessel	V-25001E	Idrostatic test	**Satisfactory**

DOCUMENTI APPLICABILI / *Applicable Documents*

TITOLO DOCUMENTO / *Document Title*	**NUMERO DOCUMENTO** / *Document Number*	**REVISIONE** / *Revision*	**STATO DOCUMENTO** / *Document Status*
INSPECTION AND TEST PLAN – H2 STORAGE VESSEL	1723001756-QC-ITP-00002	04	AFC
HIDROSTATIC TEST PROCEDURE (FAT PROCEDURE) H2 STORAGE VESSEL	1723001756-QC-PRO-00012	03	AFC

Remarks:

DISTRIBUZIONE A: / *Distribution to:*

☒**GESTIONE FORNITURE** / *Supply Management Department*	☒**CAPO COMMESSA** / *Project Manager*
☒**PRODUZIONE** / *Production*	☒**FORNITORE** / *Supplier*
☒**PPLM** / *Project Procurement & Logistic Manager*	☒**P.Q.M.**
☒**MAGAZZINO** / *Warehouse*	☒**P.E.M.**

ATTIVITA' ESEGUITE / *Activities Carried Out*

A - INTRODUZIONE / *Preliminary Introduction*

The present report refers to the inspection visit carried out 21/10/2024 at Brembana & Rolle S.p.A. factory, located in Via delle Indistrie, 35 – 35020 Albignasego (PD) , ITALY.
The following inspection activities were witnessed by Rosetti Marino and Crosswind as specified in the Notification of Inspection (Noi Nr: 31 rev.0) step 77 of ITP and Factory acceptance test procedure.
Attendees the test:

Cerato Alex (Rosetti Marino)
Michele Rampazzo (Brembana & Rolle S.p.A.)
Luigi D'Alessandro (CW)

Area of concern
None

B –SCOPO DELL'ISPEZIONE / *Scope of Inspection*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-010	SHEET 2 of 5
		Data *Date 21/10/2024*	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

DESCRIZIONE DEI TEST PRESENZIATI / *Description of witnessed tests*	**ESITO /** *Result*
As per Inspection Notification follow the activities: • Hydostatic test • Check Documentation	**Satisfactory**

C –DETTAGLIO DEGLI STRUMENTI UTILIZZATI PER TEST E ISPEZIONE / *Details of Inspection and Test Instruments used*

NOME DELLO STRUMENTO *Equipment name*	**PRODUTTORE** *Manufacturer*	**MODELLO** *Model*	**PROSSIMA TARATURA** *Next calibration*
DIAL PRESSURE GAUGE	**FLUIDMEC**	**Cube25 sn. p284**	**25.03.2025**
DIAL PRESSURE GAUGE	**FLUIDMEC**	**Bube25 sn. P295**	**25.03.2025**
DIGITAL TERMOMETER	**RS PRO**	**1327K sn. 200306847**	**08.02.2025**

Remarks:
None.

D –ALLEGATI / *Attachments (***CERTIFICATI E TEST REPORT** */ Certificates and Test Reports)*

NUMERO DOCUMENTO / *Document Number*	**DESCRIZIONE** / *Description*	**TIPO** / *Type*	**NR. PAGINE** / *No. Pages*
23096-SNE HPT01	HYDROSTATIC TEST REPORT	REPORT	1
C12229F8B0	CERTIFICATE OF CALIBRATUION	CERTIFICATE	3
P284-2024-09-25	CALIBRATION REPORT	REPORT	1
P295-2024-09-25	CALIBRATION REPORT	REPORT	1
-	MEDIOM WATER QUALITY CHARACTERISTICS	DECLARATION	2
1723001756-QC-ITP-00002	INSPECTION AND TEST PLAN – H2 STORAGE VESSEL	ITP signed	16
13003751-21001336-2024-02-08	CALIBRATION REPORT	REPORT	1

Remarks:
None.

E – DETTAGLI ED ESITO DELL'ISPEZIONE */ Details and Results of Inspection*

Hidrostatic test Inspection and check completed with satisfactory results

F – CONCLUSIONI */ Conclusions*

Test Activities Carried Out With Positive Results.

G – PUNTI IRRISOLTI */ Outstanding points*

None.

H – STATO PACKING LIST / *Packing List Status*	☐ **EMESSO** / *Issued*	☒ **NON EMESSO** / *Not Issued*	DD/MM/YYYY **ULTIMA DATA UTILE** / *Last Date*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

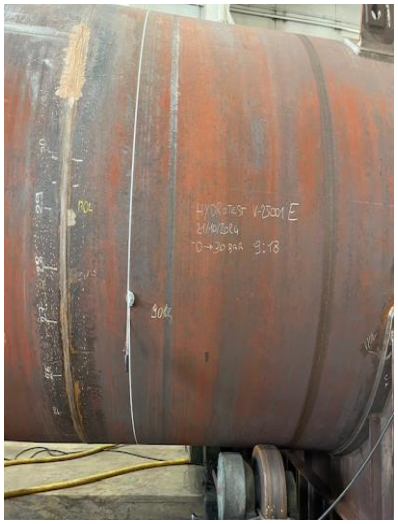
QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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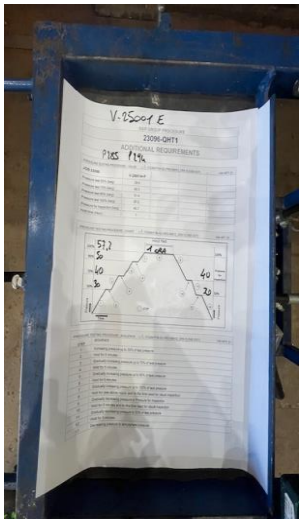
PUNCH LIST REPORT: VEDI ALLEGATO N° / *Refer to Attachment n° NOT APPLICABLE*

REPORT FOTOGRAFICO (SE PRESENTE) / *Digital Pictures (if any)*

Overview Vessel





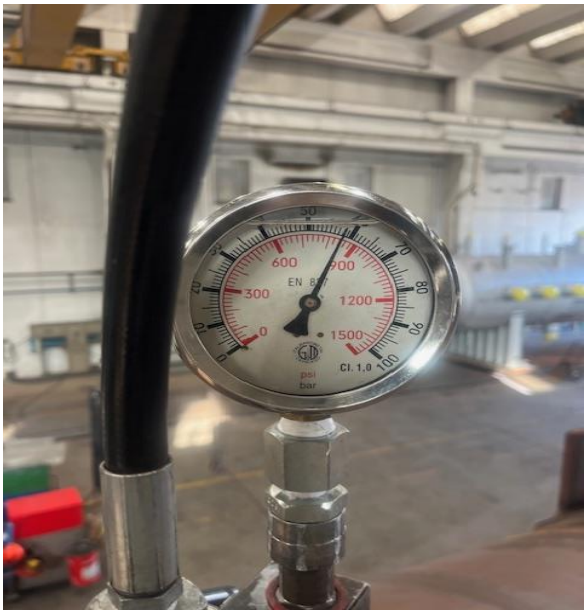




L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-BRE-1756-010	SHEET 4 of 5
		Data *Date 21/10/2024*	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	







L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	INSPECTION REPORT	Report No. IR-BRE-1756-010	SHEET 5 of 5
		Data *Date* 21/10/2024	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	





NON VALIDO PER IL RILASCIO DELLA FORNITURA / *It is not valid for the supply's release*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Quality Control Dept. Cerato Alex per Rosetti Marino SpA		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-015	SHEET 1 of 10
		Data *Date* 05/11/2024	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

DESCRIZIONE DEL MATERIALE / *Material Description*

POS. *Item*	**QUANTITA'** *Quantity*	**DESCRIZIONE** *Description*	**Nr. TAG** *TAG No.*	**TIPO DI ISPEZIONE** / *Kind of Inspection*	**ESITO** / *Result*
10	1	Hydrogen Storage Vessel	V-25001E	Visual Check DFT/ Ral	**Satisfactory**

DOCUMENTI APPLICABILI / *Applicable Documents*

TITOLO DOCUMENTO / *Document Title*	**NUMERO DOCUMENTO** / *Document Number*	**REVISIONE** / *Revision*	**STATO DOCUMENTO** / *Document Status*
INSPECTION AND TEST PLAN – H2 STORAGE VESSEL	1723001756-QC-ITP-00002	04	AFC
GAD AND FOUNDATION LOADING DIAGRAM – HYDROGEN STORAGE VESSEL ITEM V-25001A-F	1724000204-MAT-PRO-00009	02	AFC
ACTUATORS SURFACE PREPARATION AND PAINTING PROCEDURES	1723001756-MAT-PRO-00008	04	AFC

Remarks:

DISTRIBUZIONE A: / *Distribution to:*

☒**GESTIONE FORNITURE** / *Supply Management Department*	☒**CAPO COMMESSA** / *Project Manager*
☒**PRODUZIONE** / *Production*	☒**FORNITORE** / *Supplier*
☒**PPLM** / *Project Procurement & Logistic Manager*	☒**P.Q.M.**
☒**MAGAZZINO** / *Warehouse*	☒**P.E.M.**

ATTIVITA' ESEGUITE / *Activities Carried Out*

A - INTRODUZIONE / *Preliminary Introduction*

The present report refers to the inspection visit carried out 05/11/2024 at Brembana & Rolle S.p.A. factory, located in Via delle Indistrie, 35 – 35020 Albignasego (PD) , ITALY.
The following inspection activities were witnessed by Rosetti Marino and Crosswind as specified in the Notification of Inspection (Noi Nr: 34 rev.1; Date: 29/10/2024) and in accordance with ITP (STEP 82) and Factory acceptance test procedure.
Attendees the test:

Michele Sacchi (Rosetti Marino S.p.A.)
Stefano Linari (Rosetti Marino S.p.A.)
Silvano Volpato (Brembana & Rolle S.p.A.)

Area of concern
None

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-015	SHEET 2 of 10
		Data *Date* 05/11/2024	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

B –SCOPO DELL'ISPEZIONE / *Scope of Inspection*

DESCRIZIONE DEI TEST PRESENZIATI / *Description of witnessed tests*	**ESITO /** *Result*
As per Inspection Notification follow the activities: • Visual inspection • DFT check Vessel (coating system 1 as per coating spec. NORSOK M-501 Rev.6) • Final color check (vessel Ral 7035)	**Satisfactory**

C –DETTAGLIO DEGLI STRUMENTI UTILIZZATI PER TEST E ISPEZIONE / *Details of Inspection and Test Instruments used*

NOME DELLO STRUMENTO *Equipment name*	**PRODUTTORE** *Manufacturer*	**MODELLO** *Model*	**PROSSIMA TARATURA** *Next calibration*
Elcometer 456	**Elcometer**	**Elcometer 456 Model S**	**03-01-25**

Remarks:
None.

D –ALLEGATI / *Attachments (***CERTIFICATI E TEST REPORT** */ Certificates and Test Reports)*

NUMERO DOCUMENTO / *Document Number*	**DESCRIZIONE** / *Description*	**TIPO** / *Type*	**NR. PAGINE** / *No. Pages*
456-ZM13936-G	Certificate of Calibration	Certificate	1

Remarks:
None.

E – DETTAGLI ED ESITO DELL'ISPEZIONE */ Details and Results of Inspection*

All details has been highlighted in the test reports.

F – CONCLUSIONI */ Conclusions*

Test Activities Carried Out With Positive Results.

G – PUNTI IRRISOLTI */ Outstanding points*

None.

H – STATO PACKING LIST / *Packing List Status*	☐ **EMESSO** / *Issued*	☒ **NON EMESSO** / *Not Issued*	DD/MM/YYYY **ULTIMA DATA UTILE** / *Last Date*

PUNCH LIST REPORT: VEDI ALLEGATO N° / *Refer to Attachment n° NOT APPLICABLE*

REPORT FOTOGRAFICO (SE PRESENTE) / *Digital Pictures (if any)*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #3544		

ROSETTI MARINO	INSPECTION REPORT	**Report No**. IR-BRE-1756-015	SHEET 3 of 10
		Data *Date 05/11/2024*	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	



Overview Vessel

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35424		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.



Overview Vessel

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35424		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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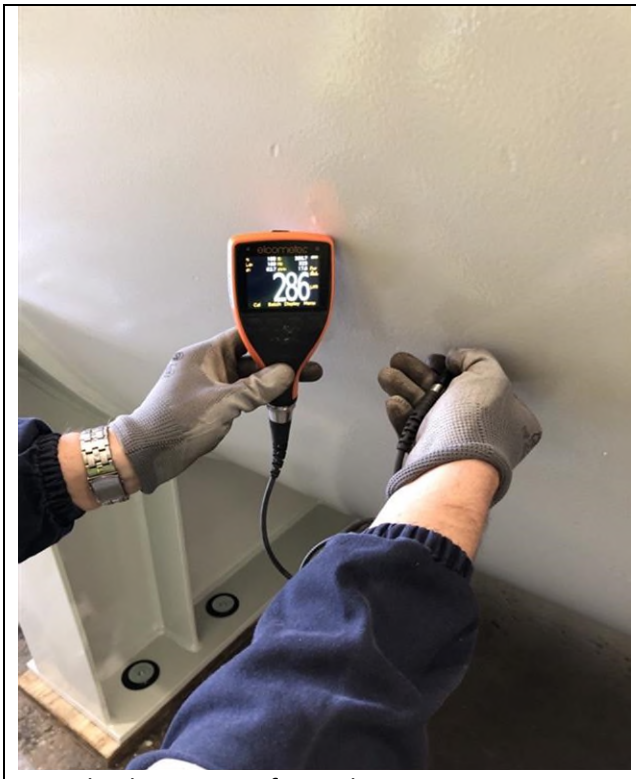
ROSETTI MARINO	INSPECTION REPORT	Report No. IR-BRE-1756-015	SHEET 5 of 10
		Data *Date 05/11/2024*	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	



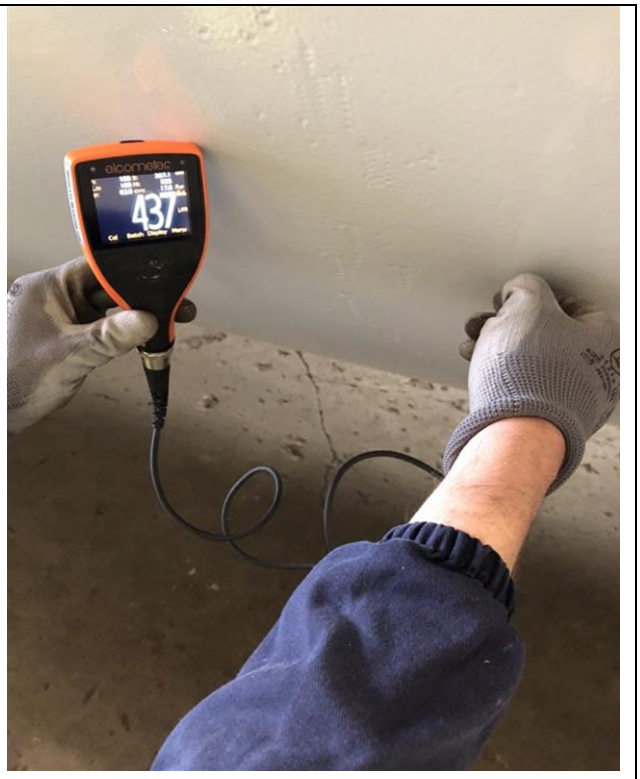
Overview Vessel upper side

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35424		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.



DFT Check. Bottom of vessel.



DFT Check. Bottom of vessel.



DFT Check. Bottom of vessel.



DFT Check. Bottom of vessel.

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35424		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.



DFT Check. Side view of vessel.



DFT Check. Side view of vessel.



DFT Check. Side view of vessel.



DFT Check. Side view of vessel.

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35464		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.



DFT Check. Upper view of vessel.



DFT Check. Upper view of vessel.



DFT Check. Upper view of vessel.



DFT Check. Upper view of vessel.

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35424		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-015	SHEET 9 of 10
		Data *Date* 05/11/2024	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	



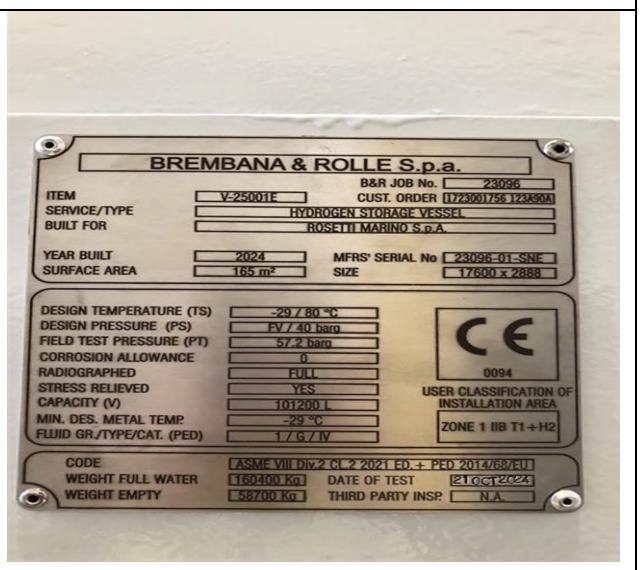
DFT Calibration Check.



Elcometer 456 Serial Number ZM13936



Ral 7035



Vessel Serial Number

NON VALIDO PER IL RILASCIO DELLA FORNITURA / *It is not valid for the supply's release*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35424		

Test Certificate

Certificat d'essai • Testzertifikat

elcometer®
www.elcometer.com

Certificate Number:
Numéro de Certificat:
Bescheinigungsnummer: 456-ZM13936-G

Instrument Part Number:
Code Article d'instrument:
Artikelnummer des Geräts: A456CFNFSS

Instrument Type:
Instrument Modèle:
Gerätetyp: Elcometer 456 Model S Dual FNF Separate
Elcometer 456 Modèle S Dual FNF à sonde séparée
Elcometer 456 Modell S mit separater Kombi-Sonde für Eisen und Nicht-Eisen (FNF)

Instrument Serial Number:
Instrument Numéro de Série:
Seriennummer des Geräts: ZM13936

Instrument PCB Serial Number:
Circuit Imprimé Numéro de Série:
Seriennummer der Leiterplatte: ZK23689-000

Measurement Date:
Date de Mesure:
Maß-datum: 03/01/2024

The instrument was calibrated using factory reference probe Serial Number UH11036 using a smooth calibration, with the factory zero plate and the thickest certified foil listed below in accordance with Elcometer's Certification Procedure.

L'instrument a été étalonné à l'aide d'un étalonnage lisse, en utilisant une Sonde de référance UH11036, une plaque zéro et la feuille d'étalonnage certifiée la plus épaisse qui sont énumérés ci-dessous, selon les Procédures d'Etalonnage d'Elcometer.

Das Gerät wurde mit einer Referenz-Sonde (Seriennummer UH11036) nach einer glatten Kalibriermethode kalibriert, durch Einsetzen einer Nullplatte und die dickste zertifizierter Folie, die unten aufgelistet ist. Die Kalibriermethode wurde gemäß Elcometer's Zertifizierungsprotokolls durchgeführt

Measurement Results: Ferrous • Resultats de Mesure: Ferreux • Messergebnisse: Eisenmetall

Foil / Substrate[1] Feuille d'Etalonnage / Substrat[1] Folie / Untergrund[1]			Actual Measured Value[1] Valeur mesurée exacte[1] Aktuelle Messwert[1]		Allowable Value[1] Valeur admissible[1] Zulässigen Wert[1]			
Value • Valeur • Wert		Serial Number[2] Numéro de Série[2] Seriennummer[2]						
µm	mils		µm	mils		µm	mils	
1488.0	58.58	UG13148	1487.0	58.54	±1%	1473.1 - 1502.9	58.00 - 59.17	Pass • Réussi • Bestanden
749.0	29.49	XL20243	751.7	29.59	±3%	726.5 - 771.5	28.60 - 30.37	Pass • Réussi • Bestanden
0.0	0.00	XC28006	0.0	0.00	±1µm	-1.0 - 1.0	-0.04 - 0.04	Pass • Réussi • Bestanden

Measurement Results: Non Ferrous • Resultats de Mesure: Non-Ferreux • Messergebnisse: Nichteisenmetall

Foil / Substrate[1] Feuille d'Etalonnage / Substrat[1] Folie / Untergrund[1]			Actual Measured Value[1] Valeur mesurée exacte[1] Aktuelle Messwert[1]		Allowable Value[1] Valeur admissible[1] Zulässigen Wert[1]			
Value • Valeur • Wert		Serial Number[2] Numéro de Série[2] Seriennummer[2]						
µm	mils		µm	mils		µm	mils	
1488.0	58.58	UG13148	1488.6	58.61	±1%	1473.1 - 1502.9	58.00 - 59.17	Pass • Réussi • Bestanden
749.0	29.49	XL20243	752.2	29.61	±3%	726.5 - 771.5	28.60 - 30.37	Pass • Réussi • Bestanden
0.0	0.00	YA00779	-0.1	0.00	±1µm	-1.0 - 1.0	-0.04 - 0.04	Pass • Réussi • Bestanden

Signed on behalf of Elcometer Limited • Signé au nom d'Elcometer Limited • Unterzeichnet im Namen Elcometer Limited

Name:
Nom:
Name: A. Smith

Quality Manager • Responsable Qualité • Qualitätsbetriebsleiter

[1] Measurements taken in microns, mils values are calculated using 1µm = 0.03937mil
[1] Les valeurs sont prises en microns. Les valeurs en 'mils' sont calculées en utilisant 1µm = 0.03937mil
[1] Messwerte sind in Microns gezeigt. Um auf „mils" umzurechnen, benutzen Sie 1µm = 0.03937mil
[2] Certificate Number: 55613
[2] Numéro de Certificat: 55613
[2] Bescheinigungsnummer: 55613

ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-013	SHEET 1 of 7
		Data *Date 29/10/2024*	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

DESCRIZIONE DEL MATERIALE / *Material Description*

POS. *Item*	**QUANTITA'** *Quantity*	**DESCRIZIONE** *Description*	**Nr. TAG** *TAG No.*	**TIPO DI ISPEZIONE** / *Kind of Inspection*	**ESITO** / *Result*
10	1	Hydrogen Storage Vessel	V-25001E	Visual Check blasting	**Satisfactory**

DOCUMENTI APPLICABILI / *Applicable Documents*

TITOLO DOCUMENTO / *Document Title*	**NUMERO DOCUMENTO** / *Document Number*	**REVISIONE** / *Revision*	**STATO DOCUMENTO** / *Document Status*
INSPECTION AND TEST PLAN – H2 STORAGE VESSEL	1723001756-QC-ITP-00002	03	IFR
GAD AND FOUNDATION LOADING DIAGRAM – HYDROGEN STORAGE VESSEL ITEM V-25001A-F	1724001756-MAC-DA-00004	04	IFI
PAINTING PROCEDURES INCLUDING SURFACE PREPARATION H2STORAGE VESSEL	1723001756-MAT-PRO-00008	02	AFC

Remarks:

DISTRIBUZIONE A: / *Distribution to:*

☒**GESTIONE FORNITURE** / *Supply Management Department*	☒**CAPO COMMESSA** / *Project Manager*
☒**PRODUZIONE** / *Production*	☒**FORNITORE** / *Supplier*
☒**PPLM** / *Project Procurement & Logistic Manager*	☒**P.Q.M.**
☒**MAGAZZINO** / *Warehouse*	☒**P.E.M.**

ATTIVITA' ESEGUITE / *Activities Carried Out*

A - INTRODUZIONE / *Preliminary Introduction*

The present report refers to the inspection visit carried out 29/10/2024 at Brembana & Rolle S.p.A. factory, located in Via delle Indistrie, 35 – 35020 Albignasego (PD) , ITALY.
The following inspection activities were witnessed by Rosetti Marino and Crosswind as specified in the Notification of Inspection (Noi Nr: 33 rev.3; Date: 29/10/2024) and in accordance with ITP (STEP 81) and Factory acceptance test procedure.
Attendees the test:

Alberto Renesto(Rosetti Marino)
Michele Rampazzo (Brembana & Rolle S.p.A.)

Area of concern
None

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Alberto Renesto *AMPP 2735* *Rosetti Marino*		

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ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-BRE-1756-013	SHEET 2 of 7
		Data *Date* 29/10/2024	Rev. *Rev. 0*
PROGETTO *Project* **Base Load Power Hub (BLPH)**	**CLIENTE** *Client* CROSSWIND	**COMMESSA /** *Job* ***123A90***	**COMMESSA FORNITORE** / *Job Vendor* -
FORNITORE *Supplier:* *Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	

B –SCOPO DELL'ISPEZIONE / *Scope of Inspection*

DESCRIZIONE DEI TEST PRESENZIATI / *Description of witnessed tests*	**ESITO /** *Result*
As per Inspection Notification follow the activities: • Visual inspection • Blasting Check Vessel (Climatic conditions; Grade of cleaness; Anchoring Profile; Dust Test)	**Satisfactory**

C –DETTAGLIO DEGLI STRUMENTI UTILIZZATI PER TEST E ISPEZIONE / *Details of Inspection and Test Instruments used*

NOME DELLO STRUMENTO *Equipment name*	**PRODUTTORE** *Manufacturer*	**MODELLO** *Model*	**PROSSIMA TARATURA** *Next calibration*
PosiTector ADV	**DeFelsko**	**PosiTector Advance S/N 793034**	**05-10-2024**
Twin Cond	**Horiba**	**Conductivity Meter B-173 S/N 102037**	**05-10-2024**
Testex Gauge	**Paint Test Equipment**	**Testex Gauge S/N AA661113**	**03-07-2025**

Remarks:
None.

D –ALLEGATI / *Attachments (***CERTIFICATI E TEST REPORT** */ Certificates and Test Reports)*

NUMERO DOCUMENTO / *Document Number*	**DESCRIZIONE** / *Description*	**TIPO** / *Type*	**NR. PAGINE** / *No. Pages*
10170/23	Certificate of Calibration	Certificate	3
---	Certificate of Calibration	Certificate	1
0315	Certificate of Calibration	Certificate	1

Remarks:
None.

E – DETTAGLI ED ESITO DELL'ISPEZIONE */ Details and Results of Inspection*

All details has been highlighted in the test reports.

F – CONCLUSIONI */ Conclusions*

Test Activities Carried Out With Positive Results.

G – PUNTI IRRISOLTI */ Outstanding points*

None.

H – STATO PACKING LIST / *Packing List Status*	☐ **EMESSO** / *Issued*	☒ **NON EMESSO** / *Not Issued*	DD/MM/YYYY **ULTIMA DATA UTILE** / *Last Date*

PUNCH LIST REPORT: VEDI ALLEGATO N° / *Refer to Attachment n° NOT APPLICABLE*

REPORT FOTOGRAFICO (SE PRESENTE) / *Digital Pictures (if any)*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Alberto Renesto *AMPP 2735* *Rosetti Marino*		

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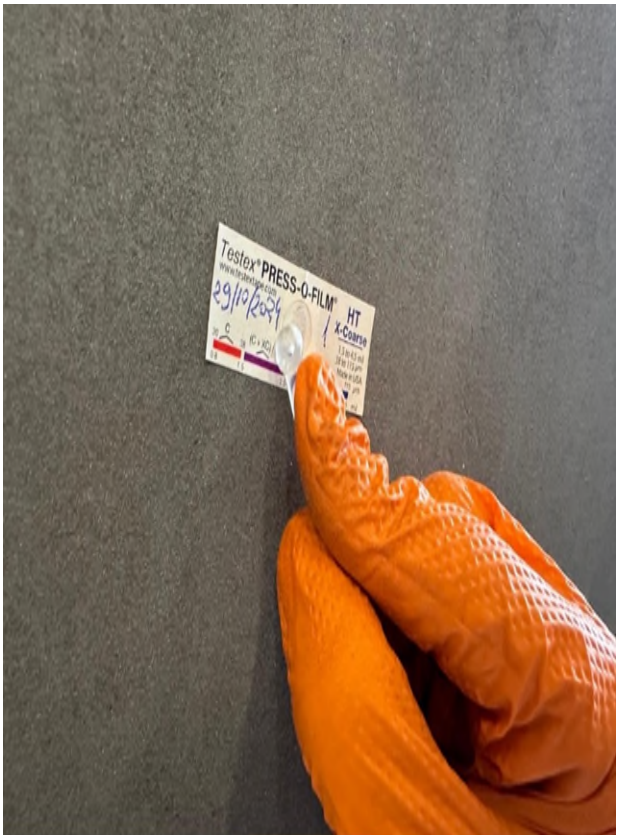
Overview Vessel After Blasting SA 2½ as per Iso 8501-1



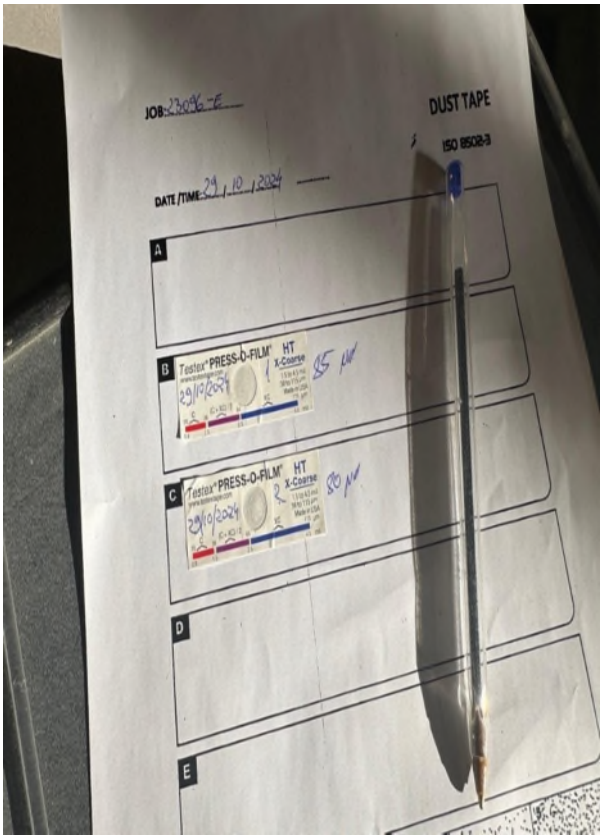
Overview Vessel After Blasting SA 2½ as per Iso 8501-1

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Anchoring Profile As per Iso 8503-5. Test 1



Anchoring Profile Check. Range Medium G

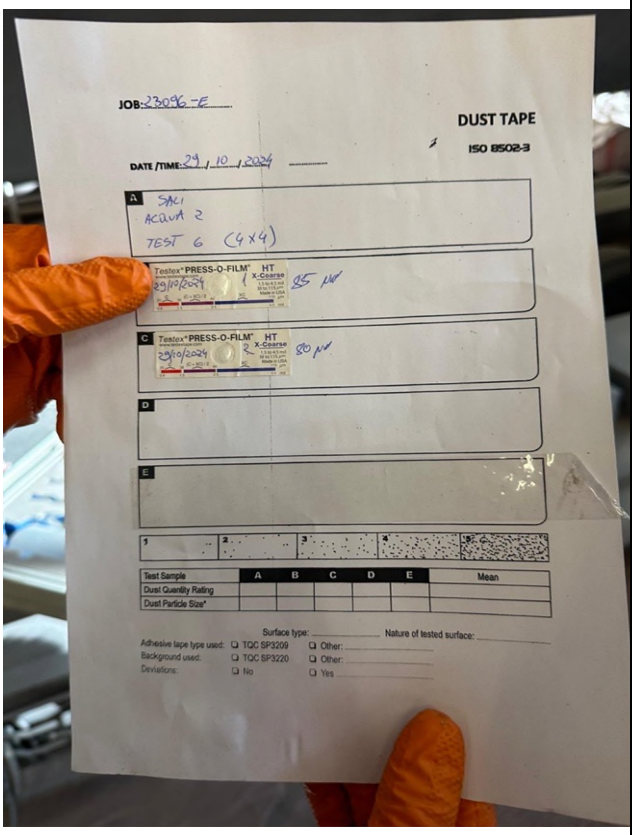
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		Data *Date 29/10/2024*	Rev. *Rev. 0*
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FORNITORE *Supplier: Brembana & Rolle S.p.A.*	**No. Ordine** *P.O. No.* **1723001756**	**OGGETTO** *Object: Hydrogen Storage Vessel*	



Dust Test Check. s per Iso 8502-3. A



Dust Test Check. As per Iso 8502-3. Acceptable

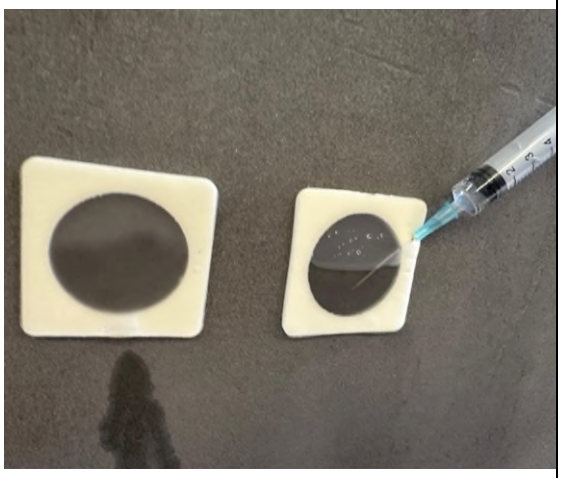
L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Alberto Renesto *AMPP 2735* *Rosetti Marino*		

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Soluble Salts Check. As per Iso 8502-6 & 9.
Conductivity of deionized water 2µS/cm.



patch. Fill inside 2.5 ml of deionized water



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Soluble Salts Check. As per Iso 8502-6 & 9. Conductivity of deionized water detected 6 µS/cm after test on the surface. Final result 16 mg/m². Max Acceptable 20 mg/m².



Climatic Condition Check.



NON VALIDO PER IL RILASCIO DELLA FORNITURA / *It is not valid for the supply's release*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Alberto Renesto *AMPP 2735* *Rosetti Marino* Alberto Renest Autore firma digitale: Alberto Renesto Nome distintivo CN = Alberto Renesto email = alberto.renesto@rosetti.it C = IT O = ROSETTI MARINO OU = DC Posizione Data: 2024.10.29 11:08:21 +01'00'		

Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE