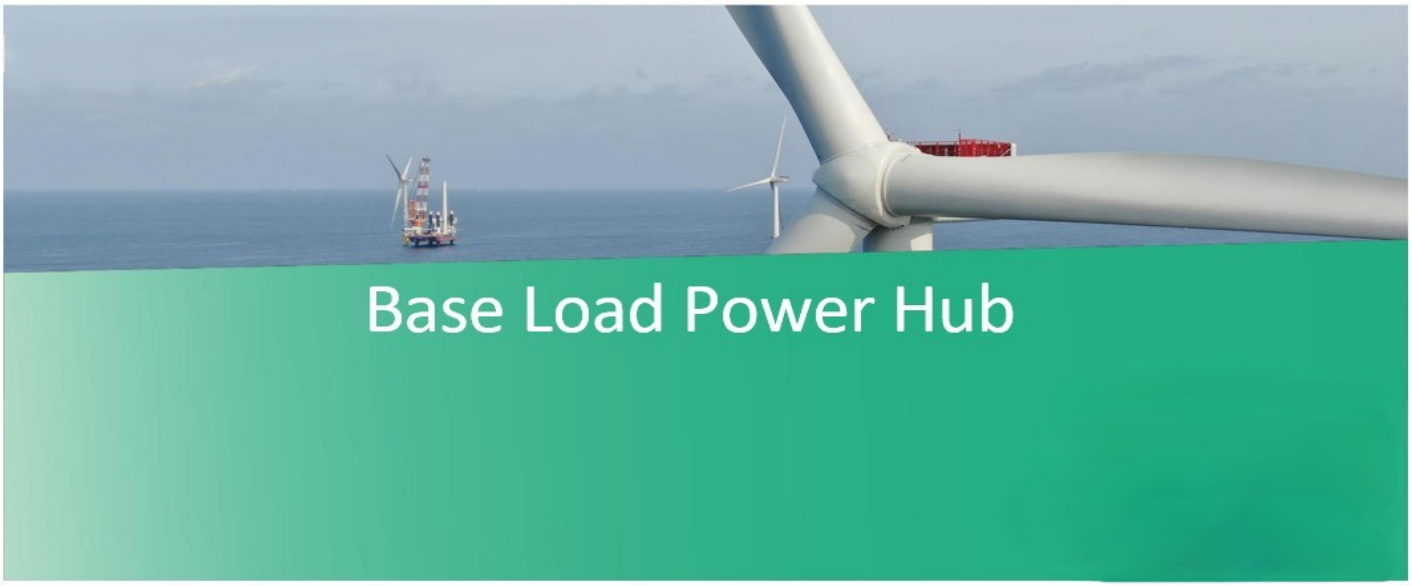
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM	70 Safety and Facility Systems
SUBSYSTEM	70-12 F&G Devices FZ-03 (Electrolyser Area)

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

Sub System N°:	70-12	Tick as appropriate	ONSHORE	O
Description:	F&G Devices FZ-03 (Electrolyser Area)		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*	NA
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*	NA
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*	NA
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:	2025-01-17	
System:	70	/	Safety and Facility Systems		
SubSystem:	70-12	/	F&G Devices FZ-03 (Electrolyser Area)		

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	88

REMARKS:

	CONTRACTOR Construction Manager	**CONTRACTOR** Commissioning Manager	**COMPANY** Construction Lead (if required)	**COMPANY** Commissioning Lead (if required)
Name	Sofia Marchetti	Anthony Iveson	CPY NOT PRESENT	CPY NOT PRESENT
Date	2025-01-18	2025-01-18	2025-01-18	2025-01-18
Signature	PROVERLIS Digitaly signed by Sofia Marchetti 2025-01-18T09:58:46.480Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-01-18T08:17:19.577Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-01-18T12:14:11.619Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-01-18T12:14:18.208Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-12 & process: MC

Instrumental	70-12 F&G Devices FZ-03 (Electrolyser Area)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-FDZ-03102	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10001509	CJX43	100	2024-12-05	RFC 2
950-FDZ-03103	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10001510	CJX43	100	2024-12-11	RFC 2
950-GDZ-03101	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001535	CJX42	100	2025-01-14	RFC 2
950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001537	CJX42	100	2025-01-13	RFC 2
950-GDZ-03104	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001538	CJX42	100	2025-01-14	RFC 2
950-GDZ-03105	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001539	CJX42	100	2025-01-14	RFC 2
950-MFA-03101	FZ-03 MFA Activation	ONSHORE	C10001545	CJX00	100	2024-12-05	RFC 2
950-MFA-03103	FZ-03 MFA Activation	ONSHORE	C10001547	CJX00	100	2024-12-05	RFC 2
950-XL-03101	FZ-03 Gas Beacon Activation	ONSHORE	C10001552	CJX00	100	2024-12-13	RFC 2
950-XL-03102	FZ-03 Fire Beacon Activation	ONSHORE	C10001553	CJX00	100	2024-12-13	RFC 2
950-XZ-03101	FZ-03 Sounder Activation	ONSHORE	C10001558	CJX00	100	2024-12-05	RFC 2
C-950-FDZ-03101/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	ONSHORE	C10002418	CJX10	100	2025-01-13	RFC 2
C-950-FDZ-03102/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	ONSHORE	C10002419	CJX10	100	2024-12-05	RFC 2
C-950-FDZ-03103/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	ONSHORE	C10002420	CJX10	100	2024-12-11	RFC 2
C-950-FDZ-03104/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	ONSHORE	C10002421	CJX10	100	2024-12-10	RFC 2
C-950-GDZ-03101/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002423	CJX10	100	2025-01-14	RFC 2
C-950-GDZ-03102/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002424	CJX10	100	2025-01-14	RFC 2
C-950-GDZ-03103/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002425	CJX10	100	2025-01-13	RFC 2
C-950-GDZ-03104/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002426	CJX10	100	2025-01-14	RFC 2
C-950-GDZ-03105/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002427	CJX10	100	2025-01-14	RFC 2
C-950-GDZ-03107/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10000230	CJX10	100	2025-01-03	RFC 2
C-950-GDZ-03108/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10000231	CJX10	100	2025-01-03	RFC 2
C-950-GDZ-03109/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10000232	CJX10	100	2025-01-09	RFC 2
C-950-MFA-03101/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	ONSHORE	C10000297	CJX10	100	2024-12-05	RFC 2
C-950-MFA-03102/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	ONSHORE	C10000298	CJX10	100	2024-12-10	RFC 2
C-950-MFA-03103/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	ONSHORE	C10000299	CJX10	100	2024-12-05	RFC 2
C-950-MFA-03104/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	ONSHORE	C10000300	CJX10	100	2024-12-10	RFC 2
C-950-XL-03101/950-JE-03104	BEACON / MARSHALLING PCS	ONSHORE	C10000329	CJX10	100	2024-12-13	RFC 2
C-950-XL-03102/950-JE-03104	BEACON / MARSHALLING PCS	ONSHORE	C10000330	CJX10	100	2024-12-13	RFC 2

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-12 & process: MC

Instrumental	70-12 F&G Devices FZ-03 (Electrolyser Area)

ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
C-950-XL-03103/950-JE-03104	BEACON / MARSHALLING PCS	ONSHORE	C10000331	CJX10	100	2024-12-16	RFC 2
C-950-XL-03104/950-JE-03104	BEACON / MARSHALLING PCS	ONSHORE	C10000332	CJX10	100	2024-12-16	RFC 2
C-950-XZ-03101/950-JE-03104	SOUNDER / MARSHALLING PCS	ONSHORE	C10000327	CJX10	100	2024-12-05	RFC 2
C-950-XZ-03102/950-JE-03104	SOUNDER / MARSHALLING PCS	ONSHORE	C10000328	CJX10	100	2024-12-11	RFC 2

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-12 & process: MC

ATEX	70-12 F&G Devices FZ-03 (Electrolyser Area)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-FDZ-03101	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10001508	CJX01	100	2025-01-13	RFC 2
950-FDZ-03104	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10001511	CJX01	100	2024-12-11	RFC 2
950-GDZ-03102	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001536	CJX01	100	2025-01-14	RFC 2
950-GDZ-03107	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10001540	CJX01	100	2025-01-07	RFC 2
950-GDZ-03108	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10001541	CJX01	100	2025-01-07	RFC 2
950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10001542	CJX01	100	2025-01-10	RFC 2
950-MFA-03102	FZ-03 MFA Activation	ONSHORE	C10001546	CJX01	100	2024-12-11	RFC 2
950-MFA-03104	FZ-03 MFA Activation	ONSHORE	C10001548	CJX01	100	2024-12-12	RFC 2
950-XL-03103	FZ-03 Gas Beacon Activation	ONSHORE	C10001554	CJX01	100	2024-12-16	RFC 2
950-XL-03104	FZ-03 Fire Beacon Activation	ONSHORE	C10001555	CJX01	100	2024-12-16	RFC 2
950-XZ-03102	FZ-03 Sounder Activation	ONSHORE	C10001559	CJX01	100	2024-12-11	RFC 2

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-12	F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001378	A	950-XZ-03101 C10001558	the ground is disconnected and the fixing bolt is missing on the (950-XZ-03101). See attached photo.	.		Gtangianu 2024-12-05	2024-12-30	Gtangianu 2024-12-30	2024-12-30
C30001388	A	950-MFA-03101 C10001545	Missing one bolt on the cover instrument. (950-MFA-03101) see attached photo.	.		Gtangianu 2024-12-05	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27
C30002328	A	C-950-GDZ-031 08/950-JE-0310 1	The armour cone of the cable gland is fitted in the wrong direction	.		Lmussi 2025-01-03	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002572	A	C-950-GDZ-031 09/950-JE-0310 1	Armor cone has been reversed. Grooved side of cone outwards - to terminate braid.	.		APolo 2025-01-09	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002574	A	C-950-GDZ-031 09/950-JE-0310 1	Cable routing to the item/equipment shall be done in order to prevent drop-off (cable shall route lower than cable gland so that any drop of	.		APolo 2025-01-09	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002749	A	950-GDZ-03103 C10001537	the earth cable is not fixed to the instrument pole	.		APolo 2025-01-13	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002753	A	950-GDZ-03103 C10001537	The internal PVC fixing system are damaged. see photo	.		APolo 2025-01-13	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002806	A	C-950-GDZ-031 01/950-JE-0310 1	Inside the instrument missing the termoshrink on the sheild . See attached photo.	.		Gtangianu 2025-01-14	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002812	A	C-950-GDZ-031 02/950-JE-0310 1	Inside the instrument missing the termoshrink on the sheild . See attached photo.	.		Gtangianu 2025-01-14	2025-01-15	Gtangianu 2025-01-15	2025-01-15

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002829	A	C-950-GDZ-03105/950-JE-03101	Inside the instrument missing the termoshrink on the sheild . See attached photo.	.		Gtangianu 2025-01-14	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30001373	B	950-XZ-03101 C10001558	the support is not well secured against vibration. another bracket needs to be added.	.		Gtangianu 2024-12-05			
C30001377	B	950-XZ-03101 C10001558	The support on the sounder is monted reversed. See attached photo.	.		Gtangianu 2024-12-05			
C30001382	B	C-950-XZ-03101/950-JE-03104 C10000327	"Identification tag wires missing side the C-950-XZ-03101). "	.		Gtangianu 2024-12-05			
C30001383	B	C-950-FDZ-03102/950-JE-03102	Identification tag wires missing side the (950-FDZ-03102).	.		Gtangianu 2024-12-05			
C30001384	B	950-MFA-03101 C10001545	the support is not well secured against vibration. another bracket needs to be added.	.		Gtangianu 2024-12-05			
C30001385	B	950-MFA-03101 C10001545	Pole installation is not as per typical drawing 123A90-DDL-EL-DD-20091 rev 2 sheet 014 detail (it is not present the teflon sheet but teflon	.		Gtangianu 2024-12-05			
C30001386	B	950-MFA-03103 C10001547	Pole installation is not as per typical drawing 123A90-DDL-EL-DD-20091 rev 2 sheet 014 detail (it is not present the teflon sheet but teflon	.		Gtangianu 2024-12-05			
C30001387	B	950-MFA-03103 C10001547	the support is not well secured against vibration. another bracket needs to be added.	.		Gtangianu 2024-12-05			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001389	B	C-950-MFA-031 01/950-JE-0310 3	Identification tag wires missing side the (950-MFA-03101).	.		Gtangianu 2024-12-05			
C30001411	B	950-FDZ-03102 C10001509	Instrument tag SS is not installed .	.		Gtangianu 2024-12-05			
C30001639	B	C-950-FDZ-031 04/950-JE-0310 2	Missing SS cable tag	.		Pschintu 2024-12-10			
C30001640	B	C-950-FDZ-031 04/950-JE-0310 2	Missing core identification tag instrument side	.		Pschintu 2024-12-10			
C30001641	B	C-950-MFA-031 02/950-JE-0310 3	Missing SS cable tag instrument side	.		Pschintu 2024-12-10			
C30001642	B	C-950-MFA-031 02/950-JE-0310 3	Missing core identification tag instrument side	.		Pschintu 2024-12-10			
C30001643	B	C-950-MFA-031 04/950-JE-0310 3	Missing core identification tag instrument side	.		Pschintu 2024-12-10			
C30001644	B	C-950-MFA-031 04/950-JE-0310 3	Missing SS cable tag instrument side	.		Pschintu 2024-12-10	2024-12-28	Ecarotenuto 2024-12-28	2024-12-28
C30001652	B	C-950-XZ-03102 /950-JE-03104 C10000328	Missing cables tag SS , side C-950-XZ-03102 / 950-JE-03104	.		APolo 2024-12-11			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001656	B	C-950-MFA-03104/950-JE-03103	Cable needs to be fixed in the secondary cable tray near instrument rack	.		Pschintu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001659	B	C-950-MFA-03102/950-JE-03103	Cable needs to be fixed in the secondary cable tray near and under instrument rack	.		Pschintu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001677	B	C-950-FDZ-03103/950-JE-03102	Core tag is missing for cable on instrument side and are wrong on JB side	.		AAndreani 2024-12-11			
C30001678	B	C-950-FDZ-03103/950-JE-03102	missing cable labelling on both JB and instrument side	.		AAndreani 2024-12-11			
C30001679	B	950-FDZ-03103 C10001510	missing tag	.		AAndreani 2024-12-11	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27
C30001812	B	950-XL-03101 C10001552	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13			
C30001813	B	950-XL-03101 C10001552	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-13			
C30001814	B	950-XL-03101 C10001552	Missing traffolyte tag side instrument	.		APolo 2024-12-13			
C30001815	B	950-XL-03102 C10001553	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001816	B	950-XL-03102 C10001553	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-13			
C30001817	B	950-XL-03102 C10001553	Missing traffolyte tag side instrument	.		APolo 2024-12-13			
C30001911	B	C-950-XL-03103 /950-JE-03104 C10000331	All cables need to be better dressed inside internal cable tray.	.		APolo 2024-12-16			
C30001915	B	C-950-XL-03104 /950-JE-03104 C10000332	All cables need to be better dressed inside internal cable tray. side 950-JE-03104	.		APolo 2024-12-16			
C30002325	B	C-950-GDZ-031 08/950-JE-0310 1	On both instrument and JB side SS cable tag is missing	.		Lmussi 2025-01-03			
C30002326	B	C-950-GDZ-031 08/950-JE-0310 1	On both instrument and JB sides, core tags are missing for all wires	.		Lmussi 2025-01-03			
C30002327	B	C-950-GDZ-031 08/950-JE-0310 1	Cable is entering the Light cable gland downwards while it should be upwards.	.		Lmussi 2025-01-03			
C30002329	B	C-950-GDZ-031 07/950-JE-0310 1	On both JB and instrument side, core identification tags are missing for all wires.	.		Lmussi 2025-01-03			
C30002330	B	C-950-GDZ-031 07/950-JE-0310 1	On both JB and instrument side, SS cable tag is missing	.		Lmussi 2025-01-03			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002563	B	C-950-GDZ-031 09/950-JE-0310 1	Missing cable tag SS , near the instrument and JB	.		APolo 2025-01-09			
C30002564	B	C-950-GDZ-031 09/950-JE-0310 1	Missing cores identification tag. C-950-GDZ-03109 / JB 950-JE-03101 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-01-09			
C30002577	B	C-950-GDZ-031 09/950-JE-0310 1	Doc: On Instrument side, an adaptor is present on tha cable gland (the adaptor is not present on the cable list)	.		APolo 2025-01-10			
C30002740	B	C-950-FDZ-031 01/950-JE-0310 2	Missing cable tag SS , near the instrument C-950-FDZ-03101 / JB 950-JE-03102.	.		APolo 2025-01-13			
C30002741	B	C-950-FDZ-031 01/950-JE-0310 2	The cable is not adequately correctly fixed to the cable tray.	.		APolo 2025-01-13			
C30002746	B	C-950-GDZ-031 03/950-JE-0310 1	Missing cable tag SS , near the instrument 950-GDZ-03103 / JB 950-JE-03101	.		APolo 2025-01-13			
C30002747	B	C-950-GDZ-031 03/950-JE-0310 1	Wrong cores identification tag. J.B. side 950-JE-03101 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-01-13			
C30002748	B	C-950-GDZ-031 03/950-JE-0310 1	Doc: On Instrument side, an adaptor is present on tha cable gland (the adaptor is not present on the cable list)	.		APolo 2025-01-13			
C30002750	B	950-GDZ-03103 C10001537	Missing traffolyte tag side instrument	.		APolo 2025-01-13			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002751	B	950-GDZ-03103 C10001537	The support is not well secured against vibration. another bracket needs to be added.	.		APolo 2025-01-13			
C30002752	B	950-GDZ-03103 C10001537	Fix the instrument tag with AISI wire.	.		APolo 2025-01-13			
C30002798	B	950-GDZ-03101 C10001535	Not installed steel plate . See attached photo.	.		Gtangianu 2025-01-14			
C30002799	B	950-GDZ-03101 C10001535	ATEX certified plug is missing - See attached photo.	.		Gtangianu 2025-01-14			
C30002800	B	950-GDZ-03101 C10001535	Not installed trafolite tag below the instrument.	.		Gtangianu 2025-01-14			
C30002803	B	C-950-GDZ-031 01/950-JE-0310 1	Identification tag wires missing both side the C-950-GDZ-03101/950-JE-03101 .See attached photo.	.		Gtangianu 2025-01-14			
C30002807	B	C-950-GDZ-031 01/950-JE-0310 1	Missing the identification cable tag side the instrument -950-GDZ-03101.	.		Gtangianu 2025-01-14			
C30002811	B	C-950-GDZ-031 02/950-JE-0310 1	Identification wire tags is missing inside the instrument (950-GDZ--03102). See attached photo.	.		Gtangianu 2025-01-14			
C30002813	B	C-950-GDZ-031 02/950-JE-0310 1	Missing cable tag side the instrument C-950-GDZ-02108.	.		Gtangianu 2025-01-14			

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SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002814	B	C-950-GDZ-03102/950-JE-03101	Missing identification wire tags inside the 950-JE-03101. See attached photo.	.		Gtangianu 2025-01-14			
C30002817	B	950-GDZ-03104 C10001538	ATEX certified plug is missing - See attached photo.	.		Gtangianu 2025-01-14			
C30002818	B	950-GDZ-03104 C10001538	Not installed trafolite tag below the instrument.	.		Gtangianu 2025-01-14			
C30002819	B	950-GDZ-03104 C10001538	Not installed steel plate . See attached photo.	.		Gtangianu 2025-01-14			
C30002821	B	950-GDZ-03105 C10001539	Not installed steel plate . See attached photo.	.		Gtangianu 2025-01-14			
C30002822	B	950-GDZ-03105 C10001539	ATEX certified plug is missing - See attached photo.	.		Gtangianu 2025-01-14			
C30002824	B	C-950-GDZ-03104/950-JE-03101	Identification wire tags is missing inside the instrument (950-GDZ--03101). See attached photo.	,		Gtangianu 2025-01-14			
C30002825	B	C-950-GDZ-03104/950-JE-03101	Missing identification wire tags inside the 950-JE-03101. See attached photo.	.		Gtangianu 2025-01-14			
C30002826	B	C-950-GDZ-03104/950-JE-03101	Missing cable tag side the instrument 950-GDZ-03104.	.		Gtangianu 2025-01-14			

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SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002827	B	C-950-GDZ-03104/950-JE-03101	Missing cable tag side the 950-JE-03101.See attached photo.	.		Gtangianu 2025-01-14			
C30002828	B	C-950-GDZ-03105/950-JE-03101	Identification wire tags is missing inside the instrument (950-GDZ--03105). See attached photo.	.		Gtangianu 2025-01-14			
C30002830	B	C-950-GDZ-03105/950-JE-03101	Missing the identification cable tag both side C-950-GDZ-03105/950-JE-03101.	.		Gtangianu 2025-01-14			
C30002831	B	C-950-GDZ-03105/950-JE-03101	Missing earthing jumper connection on the secondary cabletray. See attached photo.	.		Gtangianu 2025-01-14			

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SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-12	F&G Devices FZ-03 (Electrolyser Area)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002372	A	950-GDZ-03107 C10001540	Instrument earthing cable is missing.	.		Lmussi 2025-01-07	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002410	A	950-GDZ-03108 C10001541	Instrument earthing cable is missing.	.		Lmussi 2025-01-07	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002551	A	950-GDZ-03109 C10001542	The internal PVC fixing system are damaged.	.		APolo 2025-01-09	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002552	A	950-GDZ-03109 C10001542	Missing the earth connection on the instrument and plate block/fixing	.		APolo 2025-01-09	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002745	A	950-FDZ-03101 C10001508	The external earth locking pin is broken	.		APolo 2025-01-13	2025-01-17	Gtangianu 2025-01-17	2025-01-17
C30001648	B	950-XZ-03102 C10001559	Missing traffolyte tag side instrument	.		APolo 2024-12-11			
C30001649	B	950-XZ-03102 C10001559	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-11	2024-12-17	APolo 2024-12-17	2024-12-17
C30001651	B	950-XZ-03102 C10001559	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-11			
C30001653	B	950-FDZ-03104 C10001511	The tag tie is made of plastic. To be replaced in AISI	.		APolo 2024-12-11			

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SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001654	B	950-FDZ-03104 C10001511	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-11			
C30001655	B	950-FDZ-03104 C10001511	Missing traffolyte tag side instrument	.		APolo 2024-12-11	2024-12-20	APolo 2024-12-20	2024-12-20
C30001657	B	950-MFA-03102 C10001546	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-11			
C30001658	B	950-MFA-03102 C10001546	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-11	2024-12-17	APolo 2024-12-17	2024-12-17
C30001670	B	950-MFA-03104 C10001548	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-11			
C30001672	B	950-MFA-03104 C10001548	Missing traffolyte tag side instrument	.		APolo 2024-12-11	2024-12-20	APolo 2024-12-20	2024-12-20
C30001720	B	950-XZ-03102 C10001559	Missing cores identification tag. side 950-XZ-03102 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2024-12-12			
C30001795	B	950-XL-03103 C10001554	The protection cage of the instrument is damaged (it is not fixed)	.		APolo 2024-12-13			
C30001796	B	950-XL-03103 C10001554	Missing traffolyte tag side instrument	.		APolo 2024-12-13			

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SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001797	B	950-XL-03103 C10001554	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13			
C30001927	B	950-XL-03104 C10001555	Missing traffolyte tag side instrument	.		APolo 2024-12-16			
C30001929	B	950-XL-03104 C10001555	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-16			
C30002391	B	950-GDZ-03107 C10001540	Plug is not ATEX-certified	.		Lmussi 2025-01-07			
C30002393	B	950-GDZ-03107 C10001540	Hanging tag has not been installed	.		Lmussi 2025-01-07			
C30002411	B	950-GDZ-03108 C10001541	Hanging tag of the instrument has not been installed.	.		Lmussi 2025-01-07			
C30002412	B	950-GDZ-03108 C10001541	Instrument has not been installed at 2250 mm as per 123A90-DDL-IN-DD-40017 rev. 01 sheet 33.	.		Lmussi 2025-01-07			
C30002553	B	950-GDZ-03109 C10001542	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 2025-01-09			
C30002554	B	950-GDZ-03109 C10001542	The support is not well secured against vibration. another bracket needs to be added.	.		APolo 2025-01-09			

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SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-12	F&G Devices FZ-03 (Electrolyser Area)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002555	B	950-GDZ-03109 C10001542	Missing traffolyte tag side instrument	.		APolo 2025-01-09			
C30002556	B	950-GDZ-03109 C10001542	Fix the instrument tag with AISI wire.	.		APolo 2025-01-09			
C30002742	B	950-FDZ-03101 C10001508	Missing Weather Shield	.		APolo 2025-01-13			
C30002743	B	950-FDZ-03101 C10001508	Missing traffolyte tag side instrument	.		APolo 2025-01-13			
C30002744	B	950-FDZ-03101 C10001508	The tag tie is made of plastic. To be replaced in AISI	.		APolo 2025-01-13			
C30002808	B	950-GDZ-03102 C10001536	Not installed steel plate . See attached photo.	.		Gtangianu 2025-01-14			
C30002809	B	950-GDZ-03102 C10001536	ATEX certified plug is missing - See attached photo.	.		Gtangianu 2025-01-14			
C30002810	B	950-GDZ-03102 C10001536	Not installed trafolite tag below the instrument.	.		Gtangianu 2025-01-14			

Section 2 CONSOLIDATED PUNCH LISTS

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ROSETTI MARINO

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SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-12	F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001378	A	950-XZ-03101 C10001558	the ground is disconnected and the fixing bolt is missing on the (950-XZ-03101). See attached photo.	.		Gtangianu 2024-12-05	2024-12-30	Gtangianu 2024-12-30	2024-12-30
C30001388	A	950-MFA-03101 C10001545	Missing one bolt on the cover instrument. (950-MFA-03101) see attached photo.	.		Gtangianu 2024-12-05	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27
C30002328	A	C-950-GDZ-031 08/950-JE-0310 1	The armour cone of the cable gland is fitted in the wrong direction	.		Lmussi 2025-01-03	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002572	A	C-950-GDZ-031 09/950-JE-0310 1	Armor cone has been reversed. Grooved side of cone outwards - to terminate braid.	.		APolo 2025-01-09	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002574	A	C-950-GDZ-031 09/950-JE-0310 1	Cable routing to the item/equipment shall be done in order to prevent drop-off (cable shall route lower than cable gland so that any drop of	.		APolo 2025-01-09	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002749	A	950-GDZ-03103 C10001537	the earth cable is not fixed to the instrument pole	.		APolo 2025-01-13	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002753	A	950-GDZ-03103 C10001537	The internal PVC fixing system are damaged. see photo	.		APolo 2025-01-13	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002806	A	C-950-GDZ-031 01/950-JE-0310 1	Inside the instrument missing the termoshrink on the sheild . See attached photo.	.		Gtangianu 2025-01-14	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002812	A	C-950-GDZ-031 02/950-JE-0310 1	Inside the instrument missing the termoshrink on the sheild . See attached photo.	.		Gtangianu 2025-01-14	2025-01-15	Gtangianu 2025-01-15	2025-01-15

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SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002829	A	C-950-GDZ-031 05/950-JE-0310 1	Inside the instrument missing the termoshrink on the sheild . See attached photo.	.		Gtangianu 2025-01-14	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30001373	B	950-XZ-03101 C10001558	the support is not well secured against vibration. another bracket needs to be added.	.		Gtangianu 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001377	B	950-XZ-03101 C10001558	The support on the sounder is monted reversed. See attached photo.	.		Gtangianu 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001382	B	C-950-XZ-03101 /950-JE-03104 C10000327	"Identification tag wires missing side the C-950-XZ-03101). "	.		Gtangianu 2024-12-05	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001383	B	C-950-FDZ-031 02/950-JE-0310 2	Identification tag wires missing side the (950-FDZ-03102).	.		Gtangianu 2024-12-05	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001384	B	950-MFA-03101 C10001545	the support is not well secured against vibration. another bracket needs to be added.	.		Gtangianu 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001385	B	950-MFA-03101 C10001545	Pole installation is not as per typical drawing 123A90-DDL-EL-DD-20091 rev 2 sheet 014 detail (it is not present the teflon sheet but teflon	.		Gtangianu 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001386	B	950-MFA-03103 C10001547	Pole installation is not as per typical drawing 123A90-DDL-EL-DD-20091 rev 2 sheet 014 detail (it is not present the teflon sheet but teflon	.		Gtangianu 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001387	B	950-MFA-03103 C10001547	the support is not well secured against vibration. another bracket needs to be added.	.		Gtangianu 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07

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SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001389	B	C-950-MFA-031 01/950-JE-0310 3	Identification tag wires missing side the (950-MFA-03101).	.		Gtangianu 2024-12-05	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001411	B	950-FDZ-03102 C10001509	Instrument tag SS is not installed .	.		Gtangianu 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001639	B	C-950-FDZ-031 04/950-JE-0310 2	Missing SS cable tag	.		Pschintu 2024-12-10	2025-02-26	Gtangianu 2025-02-26	2025-02-26
C30001640	B	C-950-FDZ-031 04/950-JE-0310 2	Missing core identification tag instrument side	.		Pschintu 2024-12-10	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001641	B	C-950-MFA-031 02/950-JE-0310 3	Missing SS cable tag instrument side	.		Pschintu 2024-12-10	2025-02-03	GBertuccelli 2025-02-03	2025-02-03
C30001642	B	C-950-MFA-031 02/950-JE-0310 3	Missing core identification tag instrument side	.		Pschintu 2024-12-10	2025-02-21	JKrizanic 2025-02-21	2025-02-21
C30001643	B	C-950-MFA-031 04/950-JE-0310 3	Missing core identification tag instrument side	.		Pschintu 2024-12-10	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001644	B	C-950-MFA-031 04/950-JE-0310 3	Missing SS cable tag instrument side	.		Pschintu 2024-12-10	2024-12-28	Ecarotenuto 2024-12-28	2024-12-28
C30001652	B	C-950-XZ-03102 /950-JE-03104 C10000328	Missing cables tag SS , side C-950-XZ-03102 / 950-JE-03104	.		APolo 2024-12-11	2025-01-22	APolo 2025-01-22	2025-01-22

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SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001656	B	C-950-MFA-03104/950-JE-03103	Cable needs to be fixed in the secondary cable tray near instrument rack	.		Pschintu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001659	B	C-950-MFA-03102/950-JE-03103	Cable needs to be fixed in the secondary cable tray near and under instrument rack	.		Pschintu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001677	B	C-950-FDZ-03103/950-JE-03102	Core tag is missing for cable on instrument side and are wrong on JB side	.		AAndreani 2024-12-11	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001678	B	C-950-FDZ-03103/950-JE-03102	missing cable labelling on both JB and instrument side	.		AAndreani 2024-12-11	2025-02-26	AAndreani 2025-02-26	2025-02-26
C30001679	B	950-FDZ-03103 C10001510	missing tag	.		AAndreani 2024-12-11	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27
C30001812	B	950-XL-03101 C10001552	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001813	B	950-XL-03101 C10001552	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-13	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001814	B	950-XL-03101 C10001552	Missing traffolyte tag side instrument	.		APolo 2024-12-13	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30001815	B	950-XL-03102 C10001553	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07

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SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001816	B	950-XL-03102 C10001553	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-13	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001817	B	950-XL-03102 C10001553	Missing traffolyte tag side instrument	.		APolo 2024-12-13	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30001911	B	C-950-XL-03103 /950-JE-03104 C10000331	All cables need to be better dressed inside internal cable tray.	.		APolo 2024-12-16	2025-02-22	APolo 2025-02-22	2025-02-22
C30001915	B	C-950-XL-03104 /950-JE-03104 C10000332	All cables need to be better dressed inside internal cable tray. side 950-JE-03104	.		APolo 2024-12-16	2025-01-22	APolo 2025-01-22	2025-01-22
C30002325	B	C-950-GDZ-031 08/950-JE-0310 1	On both instrument and JB side SS cable tag is missing	.		Lmussi 2025-01-03	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30002326	B	C-950-GDZ-031 08/950-JE-0310 1	On both instrument and JB sides, core tags are missing for all wires	.	Closed	Lmussi 2025-01-03	RDegliEsposti 2025-08-01	RDegliEsposti 2025-08-01	2025-08-01
C30002327	B	C-950-GDZ-031 08/950-JE-0310 1	Cable is entering the Light cable gland downwards while it should be upwards.	.		Lmussi 2025-01-03	2025-02-12	APolo 2025-02-12	2025-02-12
C30002329	B	C-950-GDZ-031 07/950-JE-0310 1	On both JB and instrument side, core identification tags are missing for all wires.	.	Closed	Lmussi 2025-01-03	RDegliEsposti 2025-08-01	RDegliEsposti 2025-08-01	2025-08-01
C30002330	B	C-950-GDZ-031 07/950-JE-0310 1	On both JB and instrument side, SS cable tag is missing	.		Lmussi 2025-01-03	2025-02-04	GBertuccelli 2025-02-04	2025-02-04

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SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002563	B	C-950-GDZ-031 09/950-JE-0310 1	Missing cable tag SS , near the instrument and JB	.		APolo 2025-01-09	2025-01-29	APolo 2025-01-29	2025-01-29
C30002564	B	C-950-GDZ-031 09/950-JE-0310 1	Missing cores identification tag. C-950-GDZ-03109 / JB 950-JE-03101 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-01-09	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30002577	B	C-950-GDZ-031 09/950-JE-0310 1	Doc: On Instrument side, an adaptor is present on tha cable gland (the adaptor is not present on the cable list)	.		APolo 2025-01-10	2025-02-04	Ecarotenuto 2025-02-04	2025-02-04
C30002740	B	C-950-FDZ-031 01/950-JE-0310 2	Missing cable tag SS , near the instrument C-950-FDZ-03101 / JB 950-JE-03102.	.		APolo 2025-01-13	2025-02-26	APolo 2025-02-26	2025-02-26
C30002741	B	C-950-FDZ-031 01/950-JE-0310 2	The cable is not adequately correctly fixed to the cable tray.	.		APolo 2025-01-13	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30002746	B	C-950-GDZ-031 03/950-JE-0310 1	Missing cable tag SS , near the instrument 950-GDZ-03103 / JB 950-JE-03101	.		APolo 2025-01-13	2025-02-03	GBertuccelli 2025-02-03	2025-02-03
C30002747	B	C-950-GDZ-031 03/950-JE-0310 1	Wrong cores identification tag. J.B. side 950-JE-03101 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-01-13	2025-02-20	JKrizanic 2025-02-20	2025-02-20
C30002748	B	C-950-GDZ-031 03/950-JE-0310 1	Doc: On Instrument side, an adaptor is present on tha cable gland (the adaptor is not present on the cable list)	.		APolo 2025-01-13	2025-02-04	Ecarotenuto 2025-02-04	2025-02-04
C30002750	B	950-GDZ-03103 C10001537	Missing traffolyte tag side instrument	.		APolo 2025-01-13	2025-01-29	GBertuccelli 2025-01-29	2025-01-29

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002751	B	950-GDZ-03103 C10001537	The support is not well secured against vibration. another bracket needs to be added.	.		APolo 2025-01-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30002752	B	950-GDZ-03103 C10001537	Fix the instrument tag with AISI wire.	.		APolo 2025-01-13	2025-02-03	GBertuccelli 2025-02-03	2025-02-03
C30002798	B	950-GDZ-03101 C10001535	Not installed steel plate . See attached photo.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002799	B	950-GDZ-03101 C10001535	ATEX certified plug is missing - See attached photo.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002800	B	950-GDZ-03101 C10001535	Not installed trafolite tag below the instrument.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002803	B	C-950-GDZ-031 01/950-JE-0310 1	Identification tag wires missing both side the C-950-GDZ-03101/950-JE-03101 .See attached photo.	.		Gtangianu 2025-01-14	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30002807	B	C-950-GDZ-031 01/950-JE-0310 1	Missing the identification cable tag side the instrument -950-GDZ-03101.	.		Gtangianu 2025-01-14	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30002811	B	C-950-GDZ-031 02/950-JE-0310 1	Identification wire tags is missing inside the instrument (950-GDZ--03102). See attached photo.	.		Gtangianu 2025-01-14	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30002813	B	C-950-GDZ-031 02/950-JE-0310 1	Missing cable tag side the instrument C-950-GDZ-02108.	.		Gtangianu 2025-01-14	2025-02-03	GBertuccelli 2025-02-03	2025-02-03

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002814	B	C-950-GDZ-03102/950-JE-03101	Missing identification wire tags inside the 950-JE-03101. See attached photo.	.		Gtangianu 2025-01-14	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30002817	B	950-GDZ-03104 C10001538	ATEX certified plug is missing - See attached photo.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002818	B	950-GDZ-03104 C10001538	Not installed trafolite tag below the instrument.	.		Gtangianu 2025-01-14	2025-02-24	Ecarotenuto 2025-02-24	2025-02-24
C30002819	B	950-GDZ-03104 C10001538	Not installed steel plate . See attached photo.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002821	B	950-GDZ-03105 C10001539	Not installed steel plate . See attached photo.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002822	B	950-GDZ-03105 C10001539	ATEX certified plug is missing - See attached photo.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002824	B	C-950-GDZ-03104/950-JE-03101	Identification wire tags is missing inside the instrument (950-GDZ--03101). See attached photo.	,		Gtangianu 2025-01-14	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30002825	B	C-950-GDZ-03104/950-JE-03101	Missing identification wire tags inside the 950-JE-03101. See attached photo.	.		Gtangianu 2025-01-14	2025-02-20	JKrizanic 2025-02-20	2025-02-20
C30002826	B	C-950-GDZ-03104/950-JE-03101	Missing cable tag side the instrument 950-GDZ-03104.	.		Gtangianu 2025-01-14	2025-02-03	GBertuccelli 2025-02-03	2025-02-03

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-12	F&G Devices FZ-03 (Electrolyser Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002827	B	C-950-GDZ-03104/950-JE-03101	Missing cable tag side the 950-JE-03101.See attached photo.	.		Gtangianu 2025-01-14	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30002828	B	C-950-GDZ-03105/950-JE-03101	Identification wire tags is missing inside the instrument (950-GDZ--03105). See attached photo.	.		Gtangianu 2025-01-14	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30002830	B	C-950-GDZ-03105/950-JE-03101	Missing the identification cable tag both side C-950-GDZ-03105/950-JE-03101.	.		Gtangianu 2025-01-14	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30002831	B	C-950-GDZ-03105/950-JE-03101	Missing earthing jumper connection on the secondary cabletray. See attached photo.	.		Gtangianu 2025-01-14	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30004249	B	950-GDZ-03103 C10003108	CALIBRATION AND TEST CRITERIA TO BE DEFINED, THIS PUNCH ITEM WILL BE VALID FOR ALL H2 GAS LEAK DETECTORS.	BACKGROUND NOISE SOUND MEASUREMENT CAMPAIGN TO BE PERFORMED IN ALL INSTRUMENT	Continuous measurements recorded during the commissioning phase to	Alveson 2025-03-19	Alveson 2025-07-17	Alveson 2025-07-17	2025-07-17

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002372	A	950-GDZ-03107 C10001540	Instrument earthing cable is missing.	.		Lmussi 2025-01-07	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002410	A	950-GDZ-03108 C10001541	Instrument earthing cable is missing.	.		Lmussi 2025-01-07	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002551	A	950-GDZ-03109 C10001542	The internal PVC fixing system are damaged.	.		APolo 2025-01-09	2025-01-15	Gtangianu 2025-01-15	2025-01-15
C30002552	A	950-GDZ-03109 C10001542	Missing the earth connection on the instrument and plate block/fixing	.		APolo 2025-01-09	2025-01-16	Gtangianu 2025-01-16	2025-01-16
C30002745	A	950-FDZ-03101 C10001508	The external earth locking pin is broken	.		APolo 2025-01-13	2025-01-17	Gtangianu 2025-01-17	2025-01-17
C30001648	B	950-XZ-03102 C10001559	Missing traffolyte tag side instrument	.		APolo 2024-12-11	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30001649	B	950-XZ-03102 C10001559	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-11	2024-12-17	APolo 2024-12-17	2024-12-17
C30001651	B	950-XZ-03102 C10001559	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-11	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001653	B	950-FDZ-03104 C10001511	The tag tie is made of plastic. To be replaced in AISI	.		APolo 2024-12-11	2025-02-25	AAndreani 2025-02-25	2025-02-25

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001654	B	950-FDZ-03104 C10001511	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-11	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001655	B	950-FDZ-03104 C10001511	Missing traffolyte tag side instrument	.		APolo 2024-12-11	2024-12-20	APolo 2024-12-20	2024-12-20
C30001657	B	950-MFA-03102 C10001546	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-11	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001658	B	950-MFA-03102 C10001546	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-11	2024-12-17	APolo 2024-12-17	2024-12-17
C30001670	B	950-MFA-03104 C10001548	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-11	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001672	B	950-MFA-03104 C10001548	Missing traffolyte tag side instrument	.		APolo 2024-12-11	2024-12-20	APolo 2024-12-20	2024-12-20
C30001720	B	950-XZ-03102 C10001559	Missing cores identification tag. side 950-XZ-03102 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2024-12-12	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001795	B	950-XL-03103 C10001554	The protection cage of the instrument is damaged (it is not fixed)	.		APolo 2024-12-13	2025-03-04	JKrizanic 2025-03-04	2025-03-04
C30001796	B	950-XL-03103 C10001554	Missing traffolyte tag side instrument	.		APolo 2024-12-13	2025-01-29	AAndreani 2025-01-29	2025-01-29

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001797	B	950-XL-03103 C10001554	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001927	B	950-XL-03104 C10001555	Missing traffolyte tag side instrument	.		APolo 2024-12-16	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30001929	B	950-XL-03104 C10001555	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-16	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30002391	B	950-GDZ-03107 C10001540	Plug is not ATEX-certified	.		Lmussi 2025-01-07	2025-01-31	AAndreani 2025-01-31	2025-01-31
C30002393	B	950-GDZ-03107 C10001540	Hanging tag has not been installed	.		Lmussi 2025-01-07	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002411	B	950-GDZ-03108 C10001541	Hanging tag of the instrument has not been installed.	.		Lmussi 2025-01-07	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002412	B	950-GDZ-03108 C10001541	Instrument has not been installed at 2250 mm as per 123A90-DDL-IN-DD-40017 rev. 01 sheet 33.	.		Lmussi 2025-01-07	2025-04-07	Gtangianu 2025-04-07	2025-04-07
C30002553	B	950-GDZ-03109 C10001542	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 2025-01-09	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002554	B	950-GDZ-03109 C10001542	The support is not well secured against vibration. another bracket needs to be added.	.		APolo 2025-01-09	2025-03-07	Gtangianu 2025-03-07	2025-03-07

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-12 F&G Devices FZ-03 (Electrolyser Area)

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002555	B	950-GDZ-03109 C10001542	Missing traffolyte tag side instrument	.		APolo 2025-01-09	2025-02-24	Ecarotenuto 2025-02-24	2025-02-24
C30002556	B	950-GDZ-03109 C10001542	Fix the instrument tag with AISI wire.	.		APolo 2025-01-09	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002742	B	950-FDZ-03101 C10001508	Missing Weather Shield	.		APolo 2025-01-13	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30002743	B	950-FDZ-03101 C10001508	Missing traffolyte tag side instrument	.		APolo 2025-01-13	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002744	B	950-FDZ-03101 C10001508	The tag tie is made of plastic. To be replaced in AISI	.		APolo 2025-01-13	2025-02-04	APolo 2025-02-04	2025-02-04
C30002808	B	950-GDZ-03102 C10001536	Not installed steel plate . See attached photo.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002809	B	950-GDZ-03102 C10001536	ATEX certified plug is missing - See attached photo.	.		Gtangianu 2025-01-14	2025-01-29	GBertuccelli 2025-01-29	2025-01-29
C30002810	B	950-GDZ-03102 C10001536	Not installed trafolite tag below the instrument.	.		Gtangianu 2025-01-14	2025-02-24	Ecarotenuto 2025-02-24	2025-02-24

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002743

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001508	1.4 Discipline	ATEX
1.2 Item	950-FDZ-03101		Flame Detector - FZ-03 Electrolyzer PK Area
1.3 Subsystem	70-12		F&G Devices FZ-03 (Electrolyser Area)

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo
Date: 2025-01-13
Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli
Date: 2025-01-29
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002744

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001508	1.4 Discipline	ATEX
1.2 Item	950-FDZ-03101	Flame Detector - FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The tag tie is made of plastic. To be replaced in AISI

Name: Alessio Polo
Date: 2025-01-13
Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo
Date: 2025-02-04
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


950-MFA-03102
950-FDZ-03101

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002745

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001508	1.4 Discipline	ATEX
1.2 Item	950-FDZ-03101	Flame Detector - FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The external earth locking pin is broken

Name: Alessio Polo

Date: 2025-01-13

Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The activity is done , the screw is replace.

Name: Giovanni Tangianu

Date: 2025-01-17

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


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13/01/2025 10:55

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002746

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002425	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03103/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cable tag SS , near the instrument 950-GDZ-03103 / JB 950-JE-03101

Name: Alessio Polo
Date: 2025-01-13
Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli
Date: 2025-02-03
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002747

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002425	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03103/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Wrong cores identification tag. J.B. side 950-JE-03101 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2025-01-13
Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-20
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002748

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002425	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03103/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Doc: On Instrument side, an adaptor is present on tha cable gland (the adaptor is not present on the cable list)

Name: Alessio Polo
Date: 2025-01-13
Signature:

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	2025-01-13
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Point not applicable

Name: Eleonora Carotenuto
Date: 2025-02-04
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002749

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001537	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the earth cable is not fixed to the instrument pole

Name: Alessio Polo

Date: 2025-01-13

Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

earthing cable is installed.

Name: Giovanni Tangianu

Date: 2025-01-16

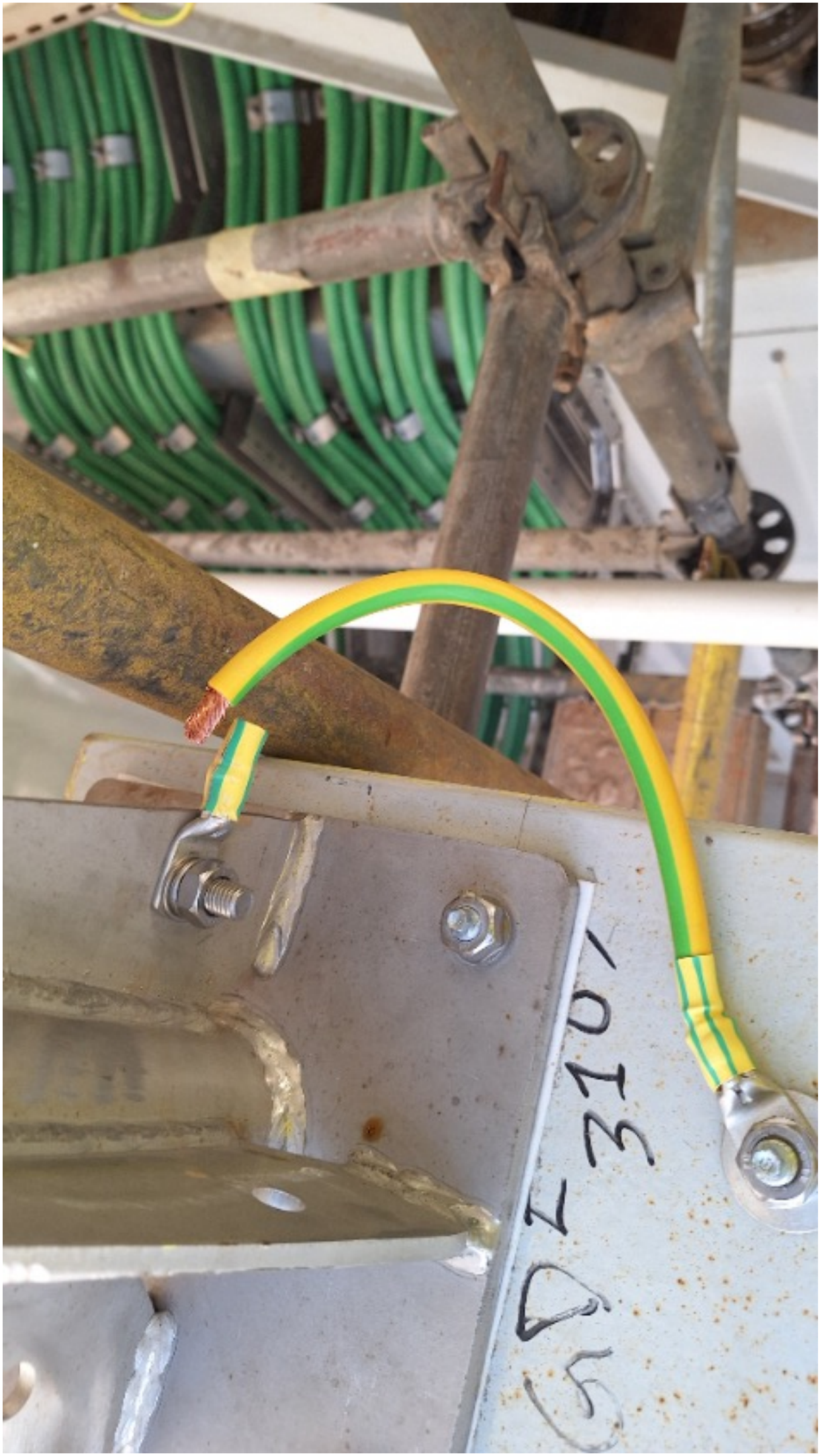
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


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ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002750

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001537	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2025-01-13

Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002751

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001537	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2025-01-13

Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002752

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001537	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03103		H2 GD FZ-03 Electrolyzer PK Area
1.3 Subsystem	70-12		F&G Devices FZ-03 (Electrolyser Area)

2 - OBSERVATION

Fix the instrument tag with AISI wire.

Name: Alessio Polo
Date: 2025-01-13
Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

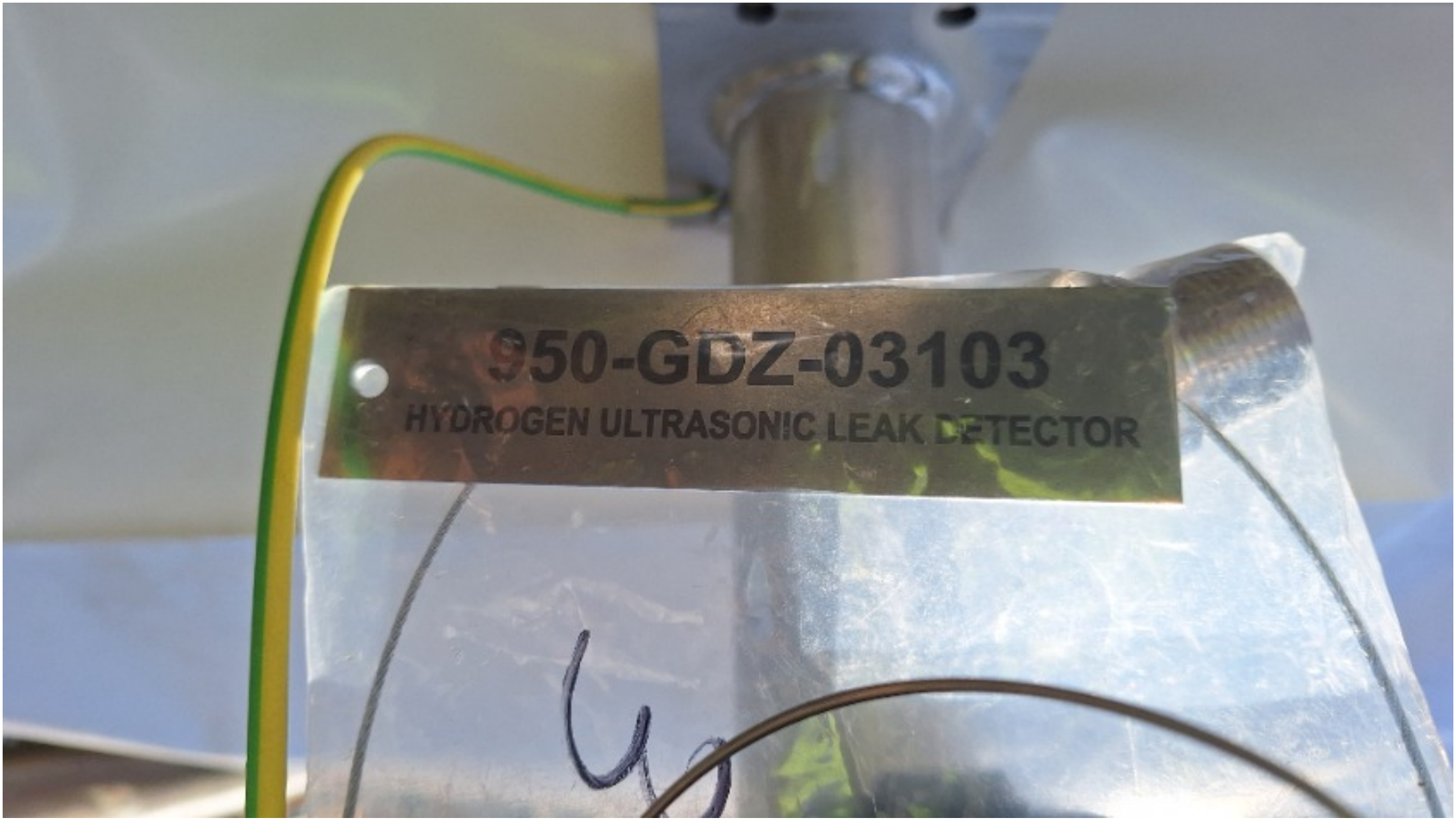
5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli
Date: 2025-02-03
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


950-GDZ-03103
HYDROGEN ULTRASONIC LEAK DETECTOR

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002753

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001537	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The internal PVC fixing system are damaged. see photo

Name: Alessio Polo

Date: 2025-01-13

Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Vendor confirm that the functionality and installation of sensor are not compromise.

Name: Giovanni Tangianu

Date: 2025-01-15

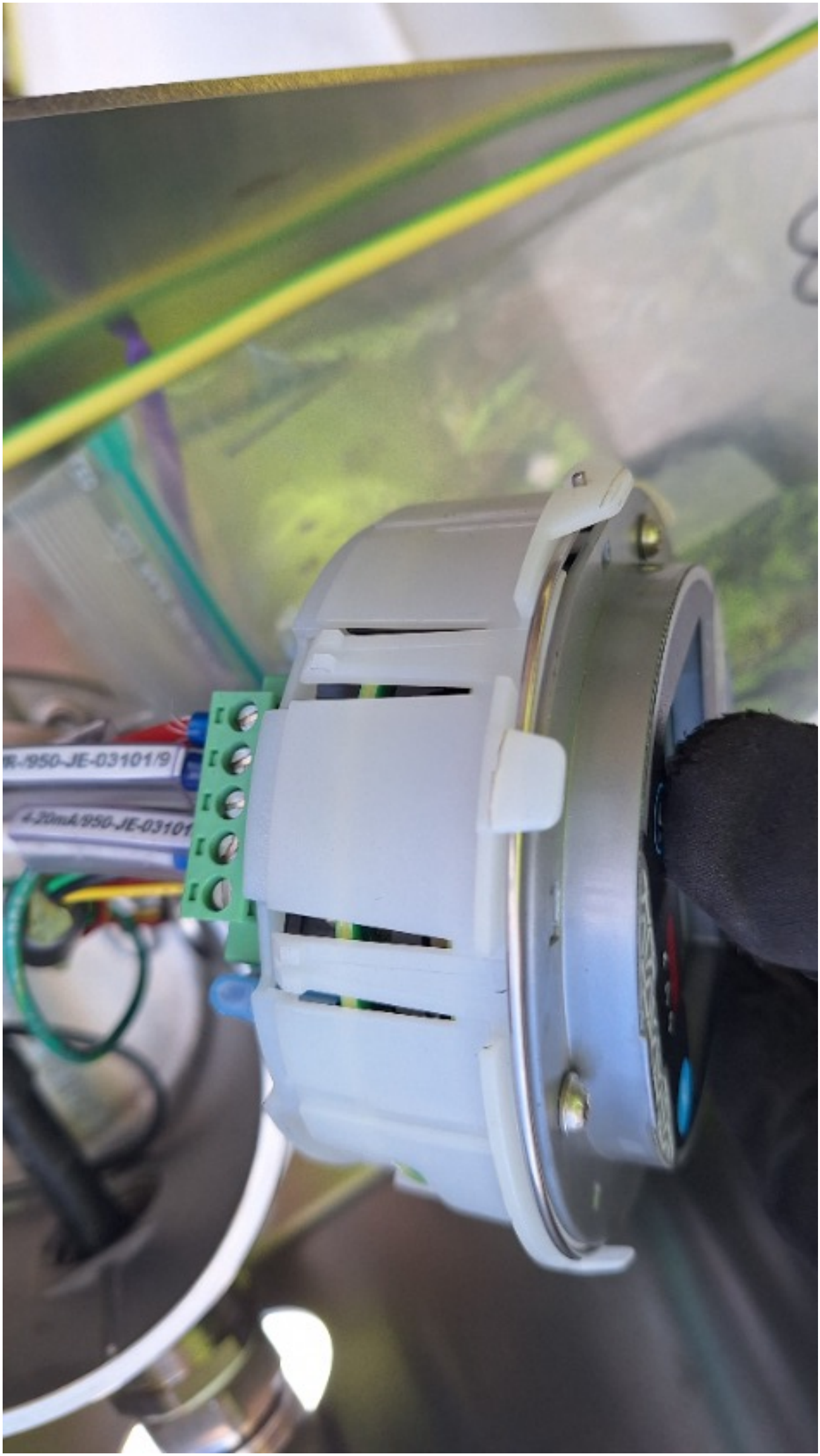
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


-950-JE-03101/9
4-20mA/950-JE-03101


OK

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002798

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001535	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03101	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Not installed steel plate . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

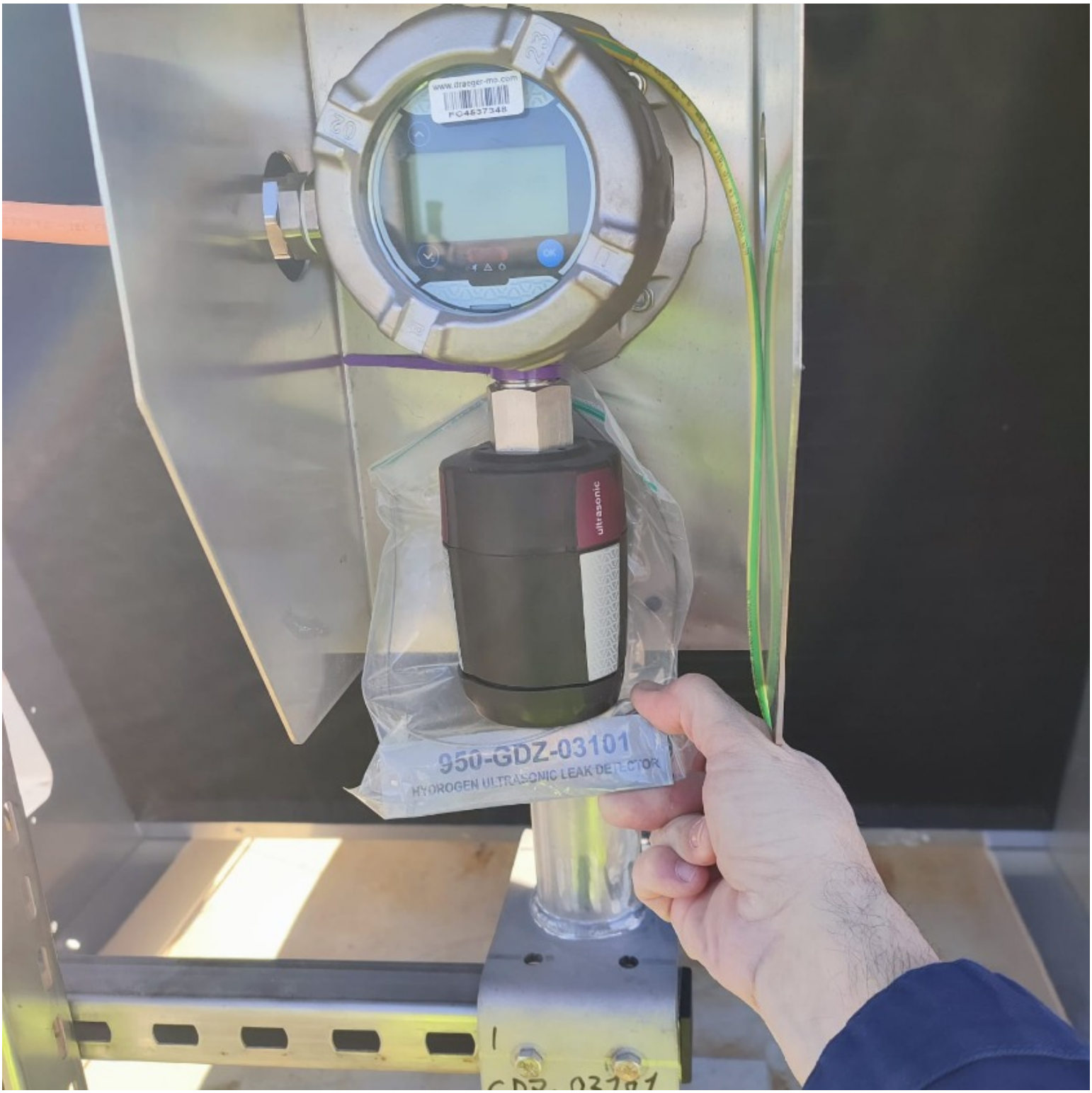
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


www.draeger-ms.com
FC4537348
ultrasonic
950-GDZ-03101
HYDROGEN ULTRASONIC LEAK DETECTOR

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002799

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001535	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03101	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

ATEX certified plug is missing - See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002800

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001535	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03101	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Not installed trafolite tag below the instrument.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002803

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002423	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03101/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Identification tag wires missing both side the C-950-GDZ-03101/950-JE-03101
.See attached photo.

Name: Giovanni Tangianu
Date: 2025-01-14
Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

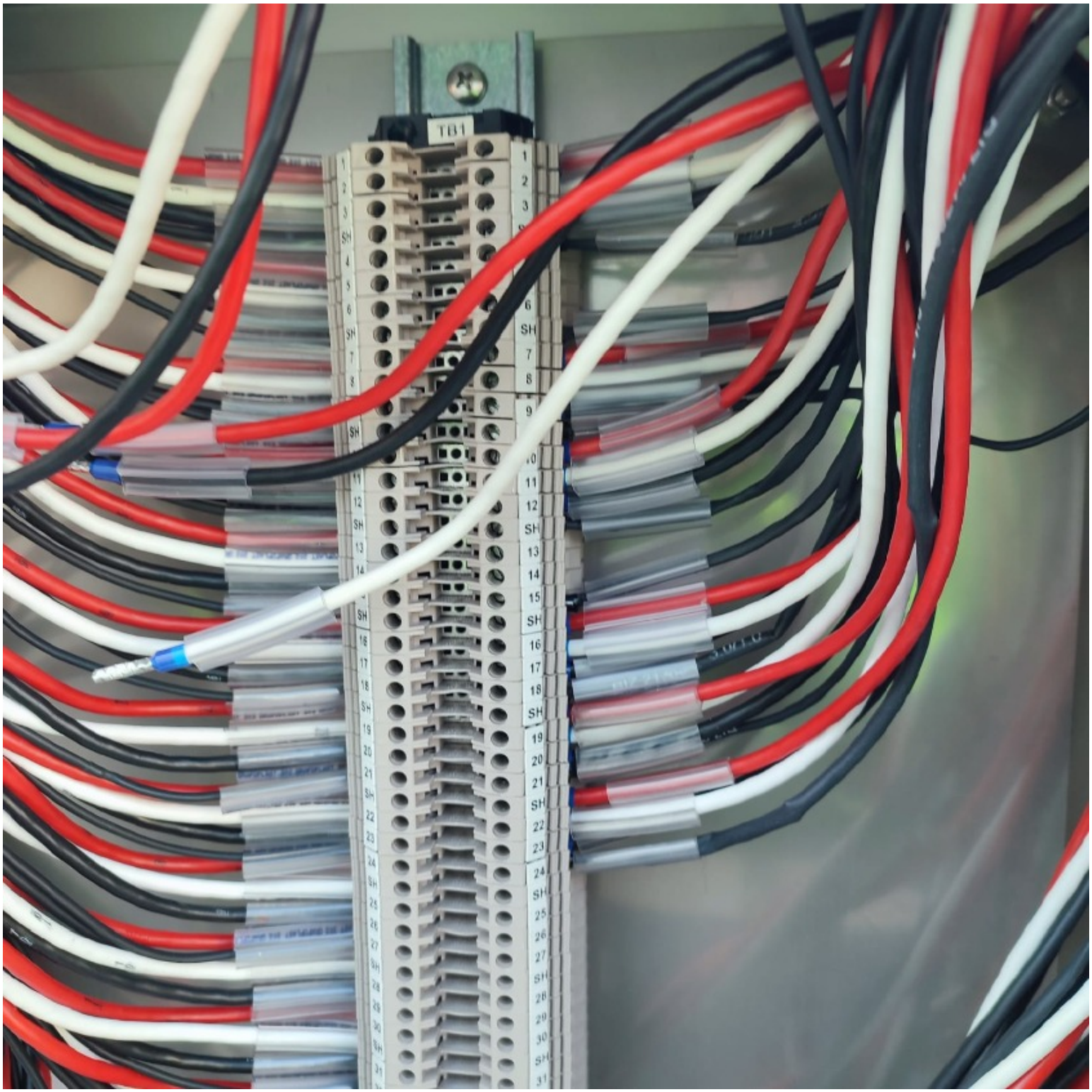
5 - CLEARANCE CHECK

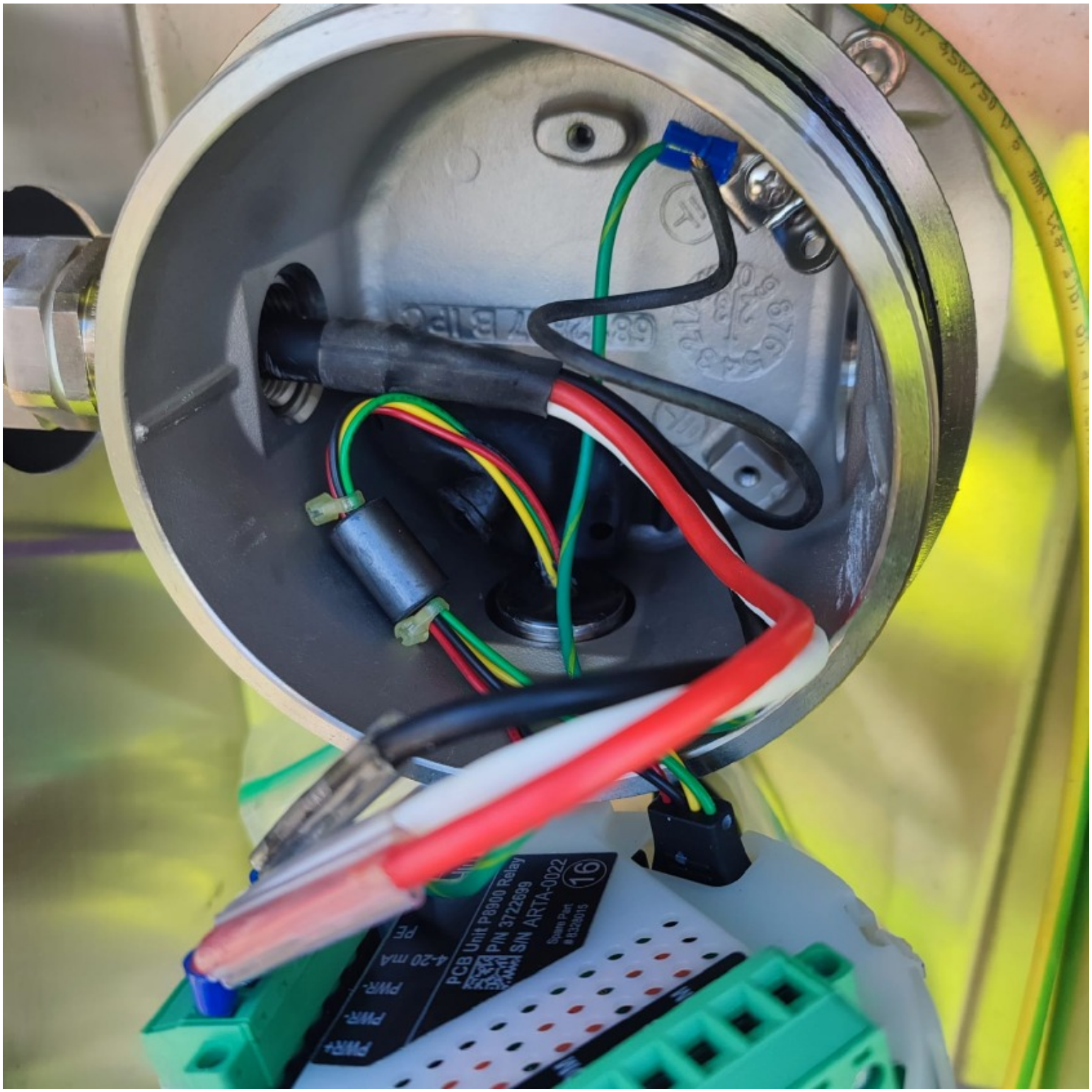
Installed.

Name: Giovanni Tangianu
Date: 2025-04-08
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


TB1


PCB Unit PB900 Relay
P/N 3722699
S/N ARTA-0022
PWR+
PWR-
PWR-
4-20 mA
PE

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002806

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002423	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03101/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Inside the instrument missing the termoshrink on the sheild .

See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-15

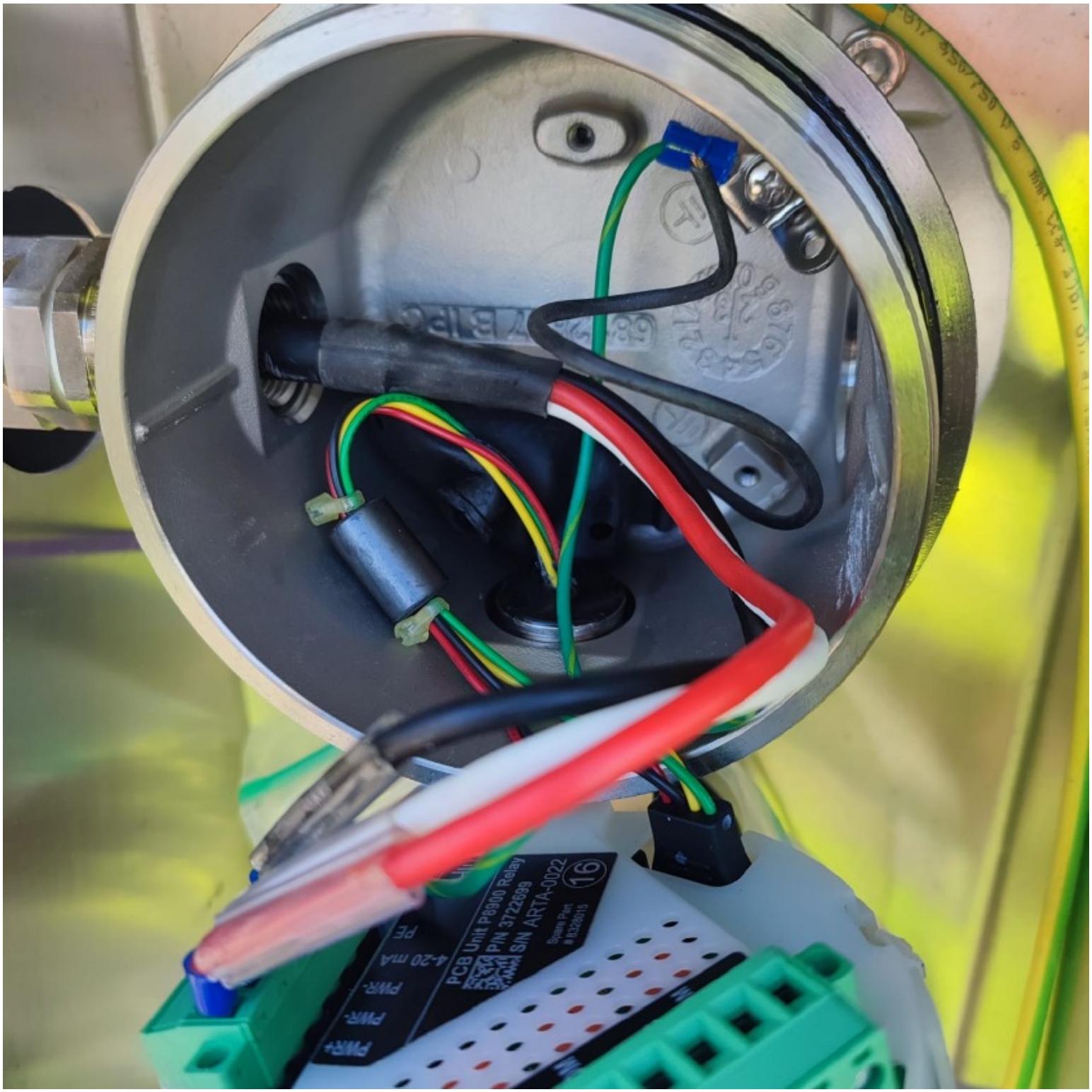
Signature

6- CLEARANCE APPROVAL

Name

Date

Signature


PCB Unit PB900 Relay
P/N 3722699
S/N ARTA-0022
PWR+
PWR-
PWR-
4-20 mA
PE

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002807

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002423	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03101/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing the identification cable tag side the instrument -950-GDZ-03101.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

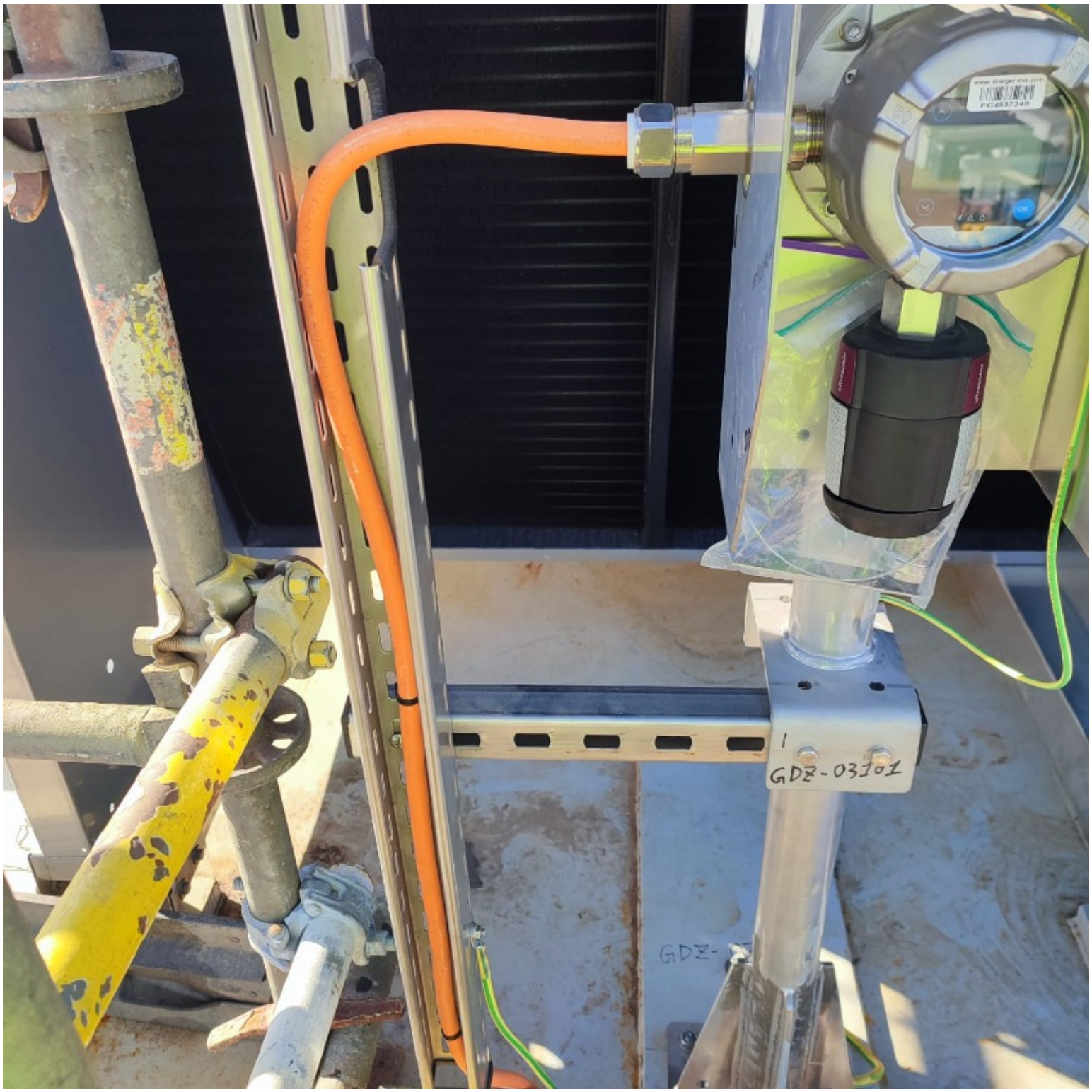
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


GDZ-03101

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002808

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001536	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03102	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Not installed steel plate . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

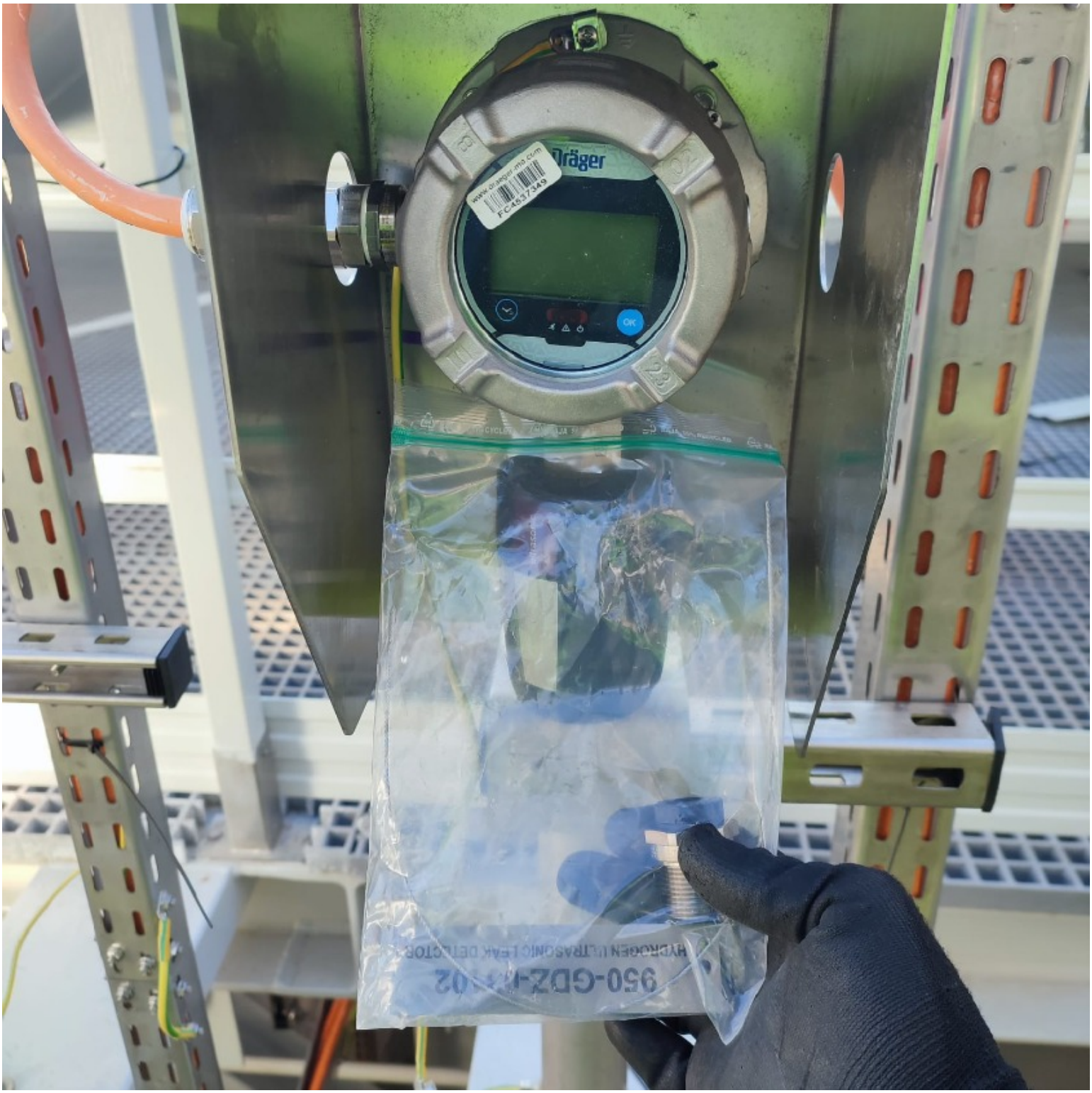
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


Dräger
OK

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002809

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001536	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03102	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

ATEX certified plug is missing - See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

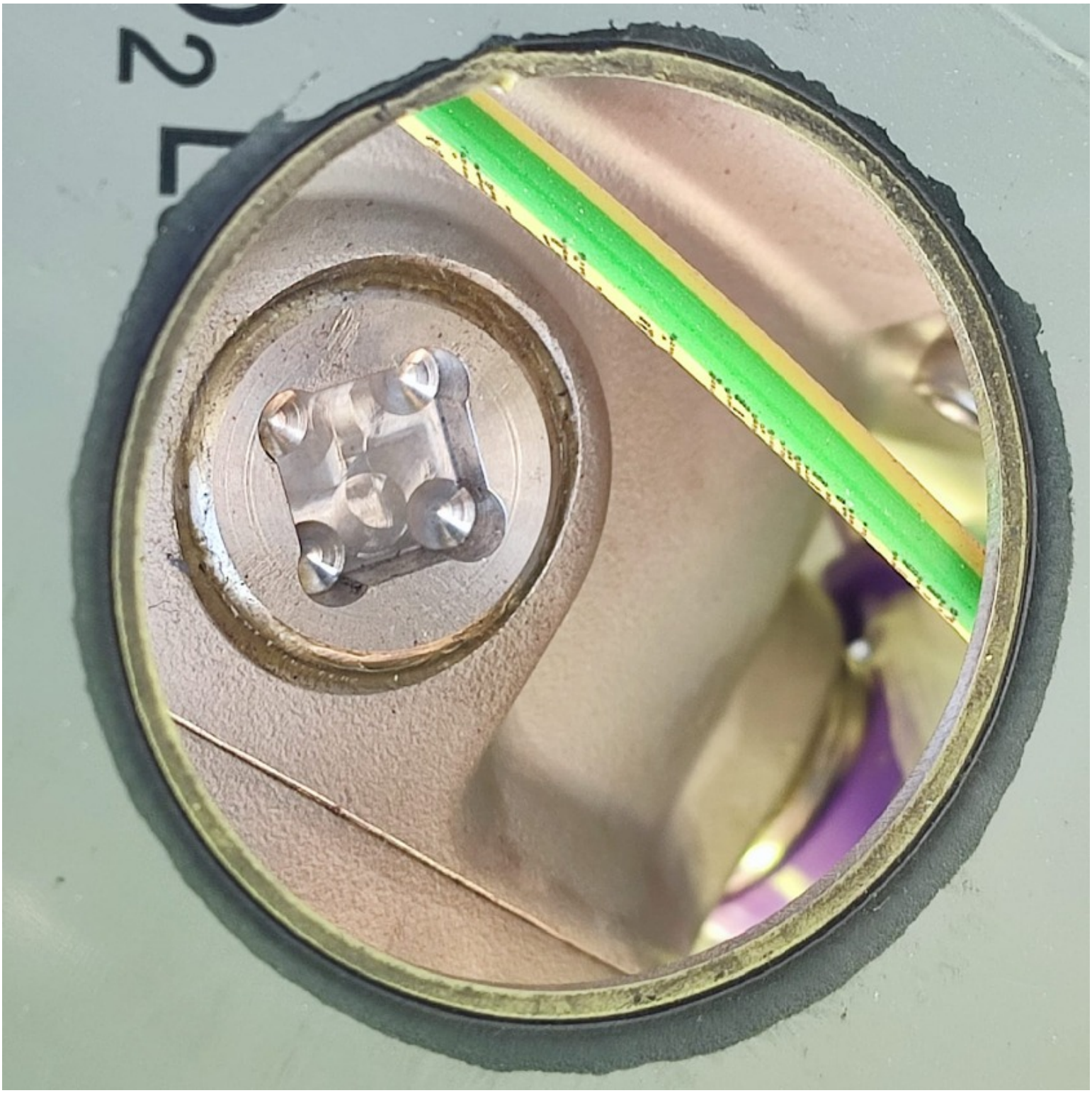
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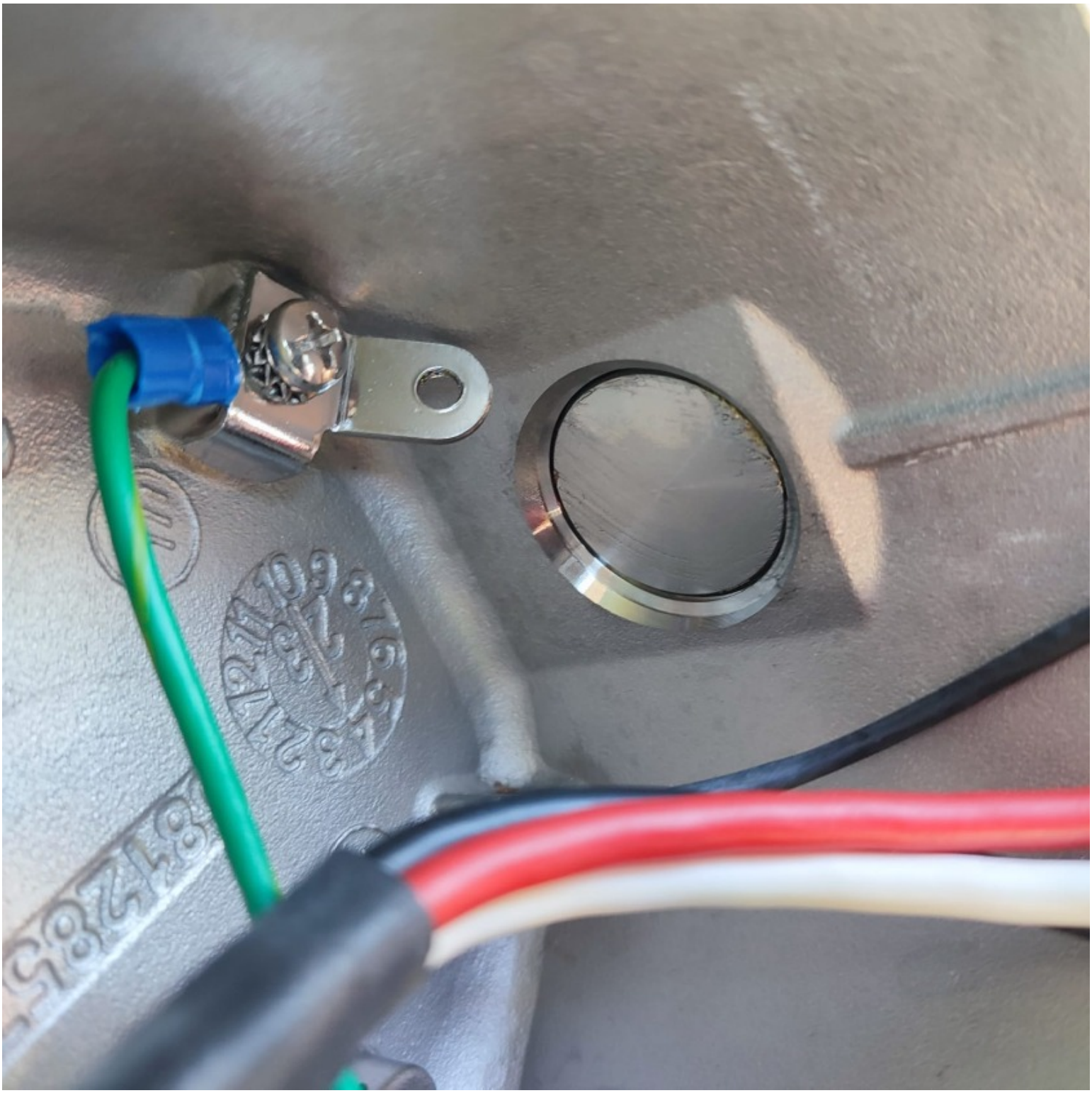
6- CLEARANCE APPROVAL

Name:

Date:

Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002810

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001536	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03102	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Not installed trafolite tag below the instrument.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

INSTALLED

Name: Eleonora Carotenuto

Date: 2025-02-24

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002811

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002424	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03102/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Identification wire tags is missing inside the instrument (950-GDZ--03102). See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

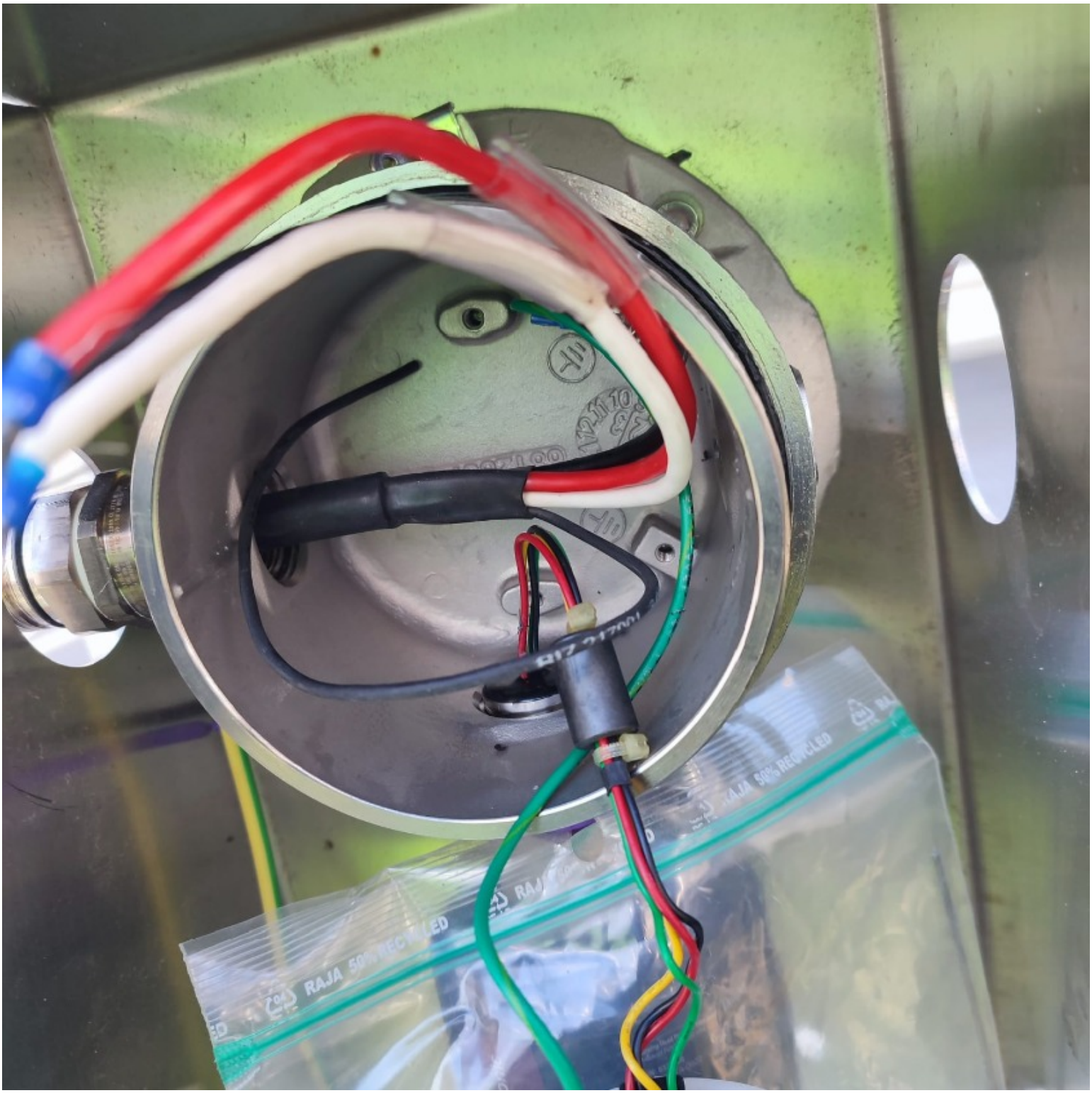
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


RAJA 50% RECYCLED

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002812

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002424	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03102/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Inside the instrument missing the termoshrink on the sheild . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-15

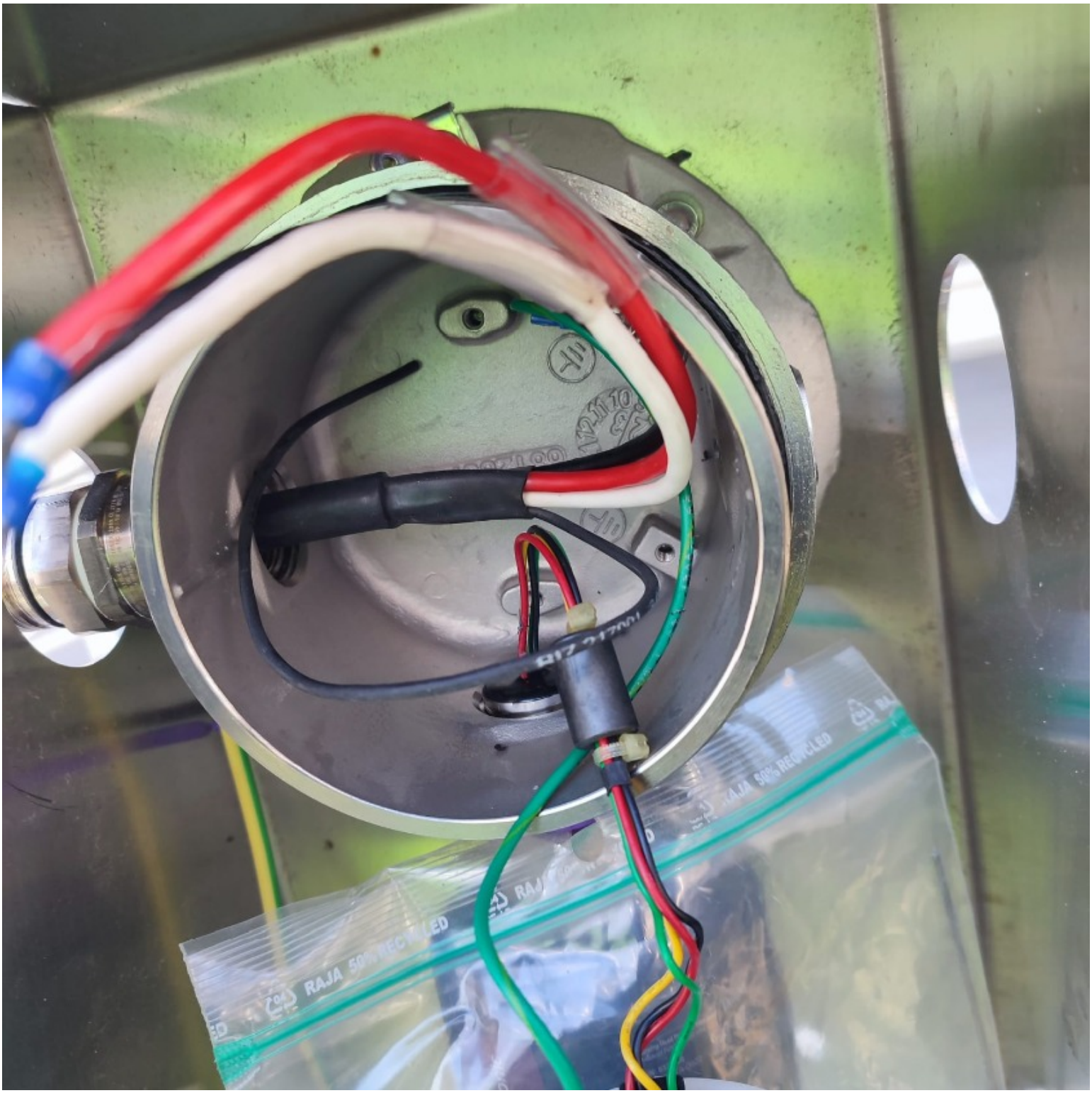
Signature

6- CLEARANCE APPROVAL

Name

Date

Signature


RAJA 50% RECYCLED

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002813

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002424	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03102/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cable tag side the instrument C-950-GDZ-02108.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-02-03

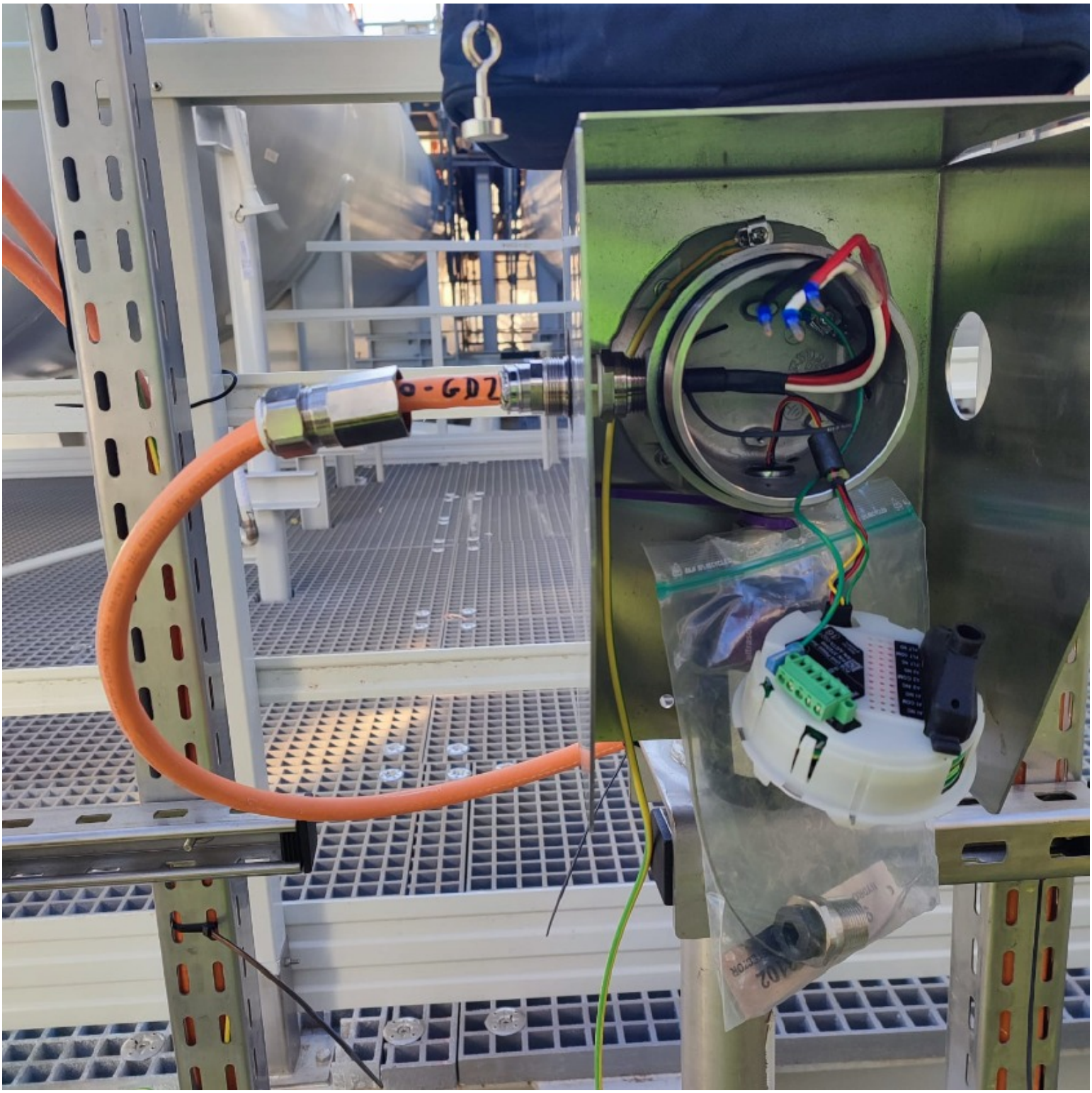
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002814

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002424	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03102/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing identification wire tags inside the 950-JE-03101.

See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

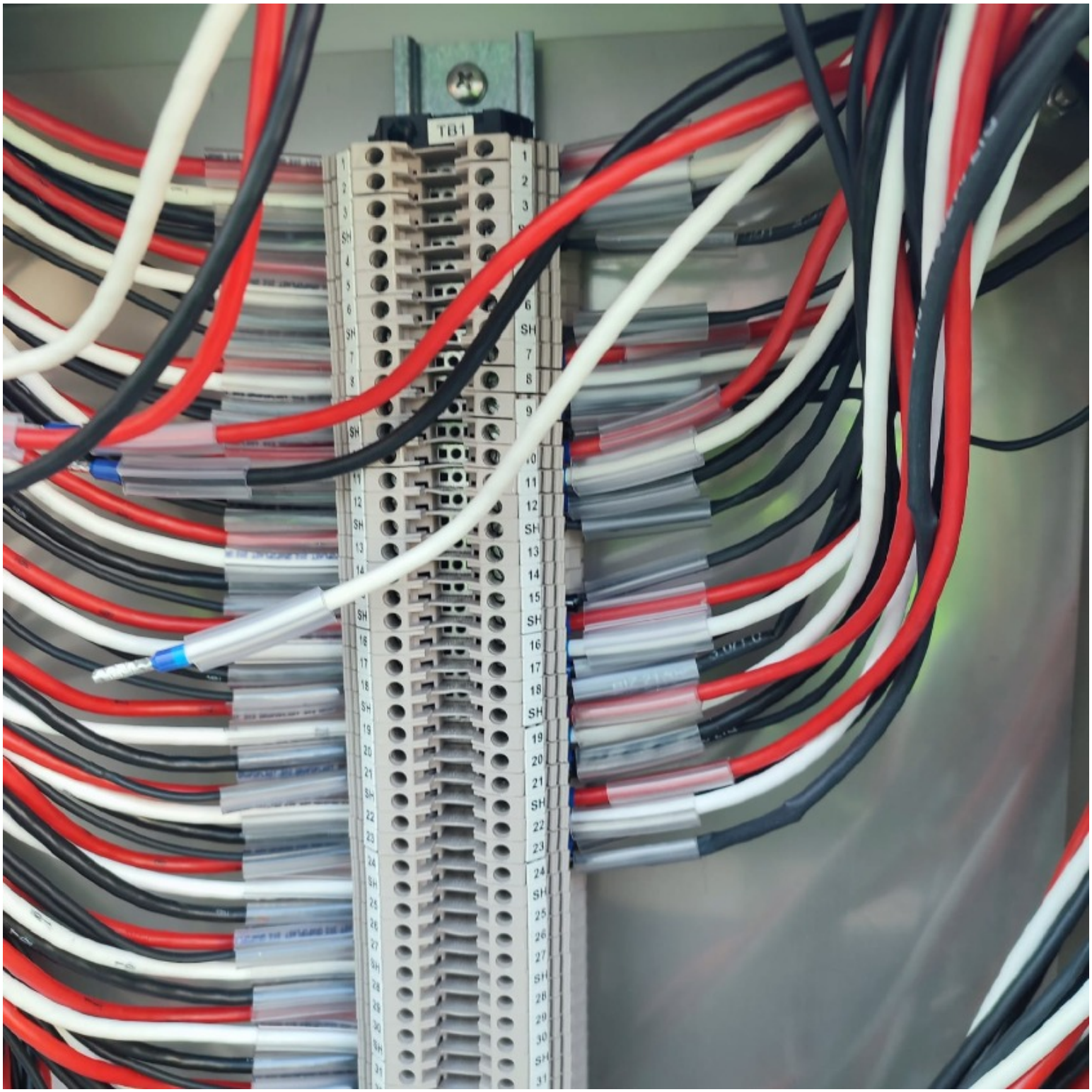
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TB1

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002817

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001538	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03104	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

ATEX certified plug is missing - See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

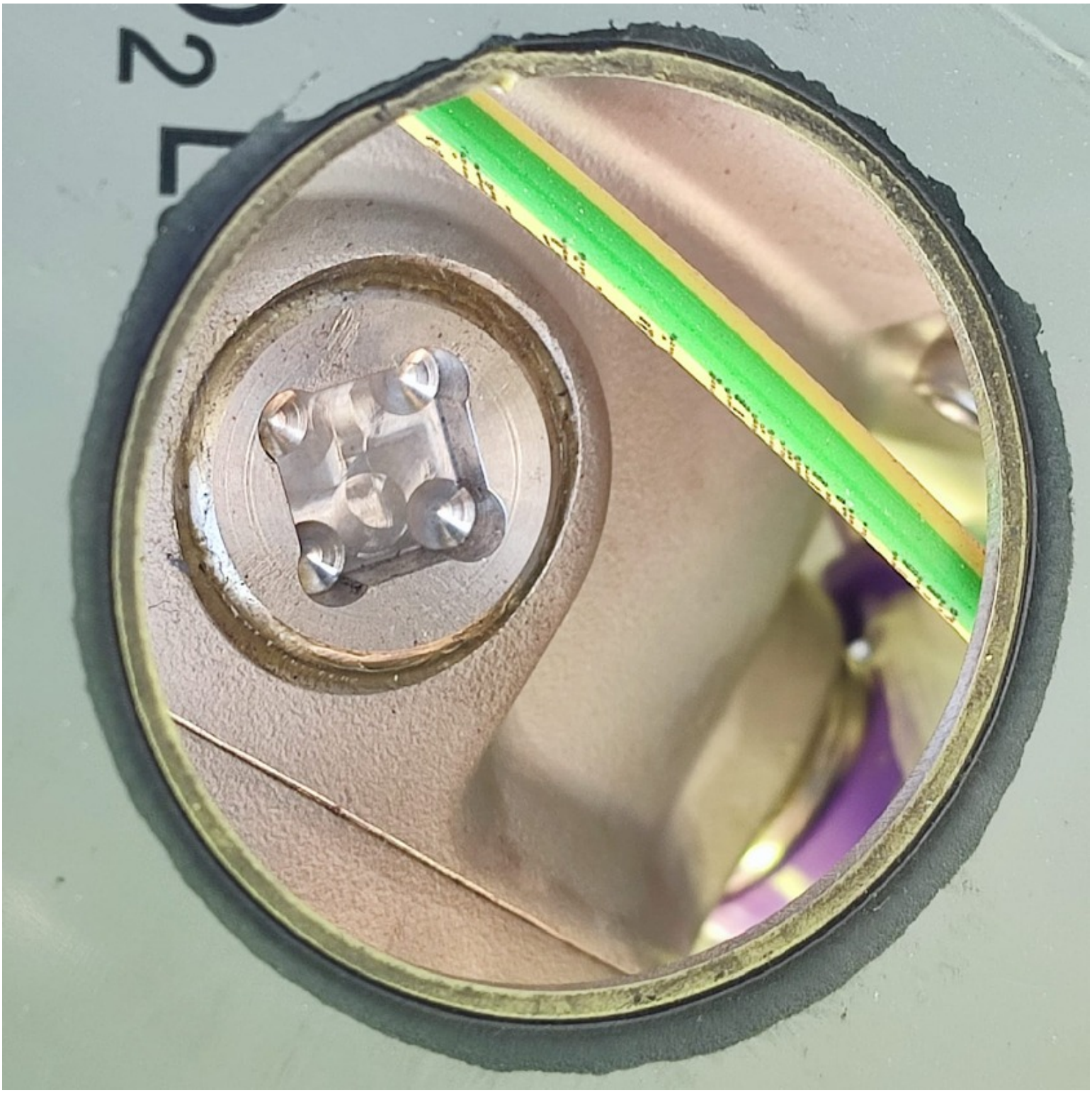
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002818

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001538	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03104	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Not installed trafolite tag below the instrument.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

INSTALLED

Name: Eleonora Carotenuto

Date: 2025-02-24

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002819

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001538	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03104	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Not installed steel plate . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

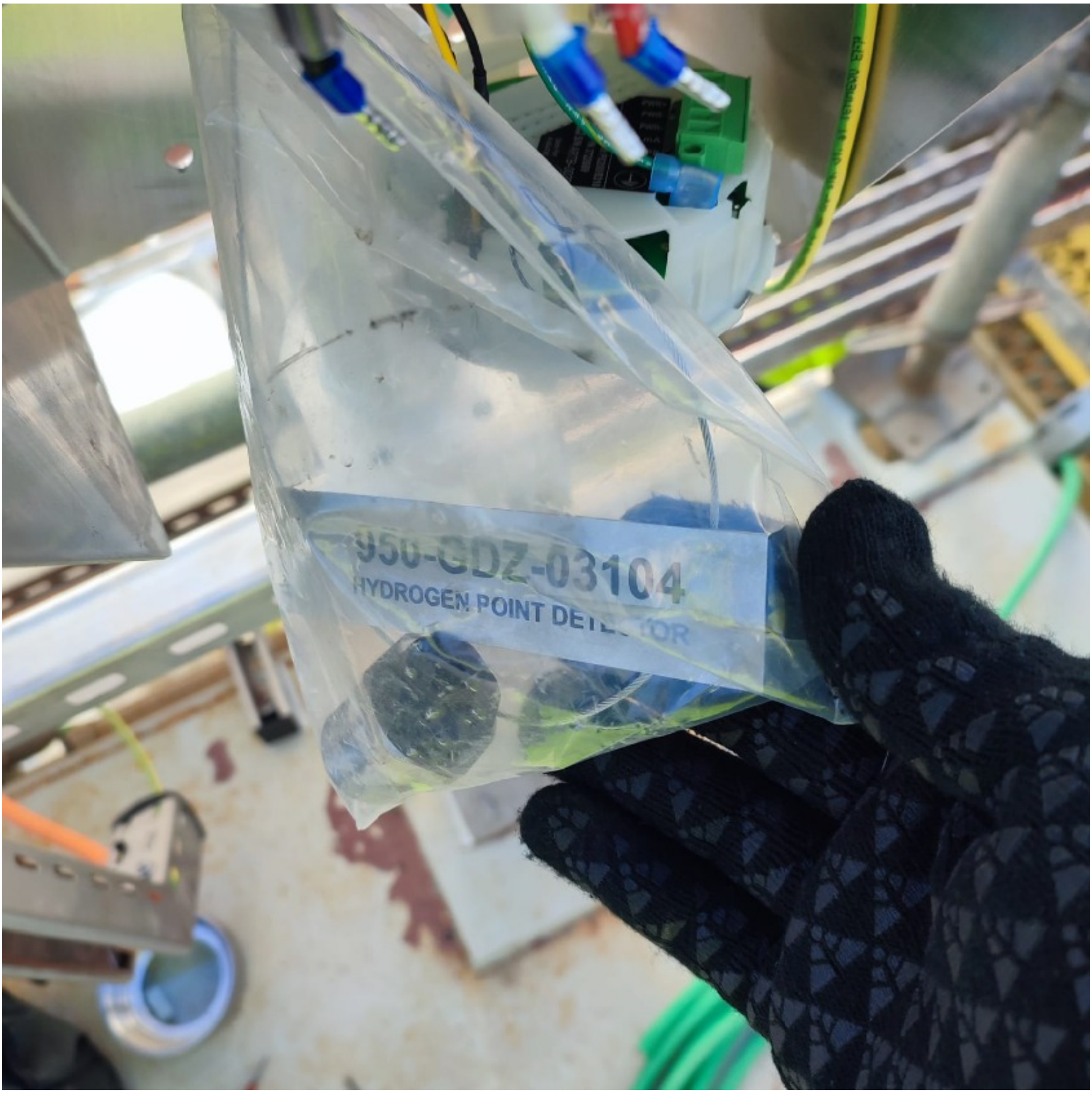
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-GDZ-03104
HYDROGEN POINT DETE

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002821

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001539	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03105	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Not installed steel plate . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

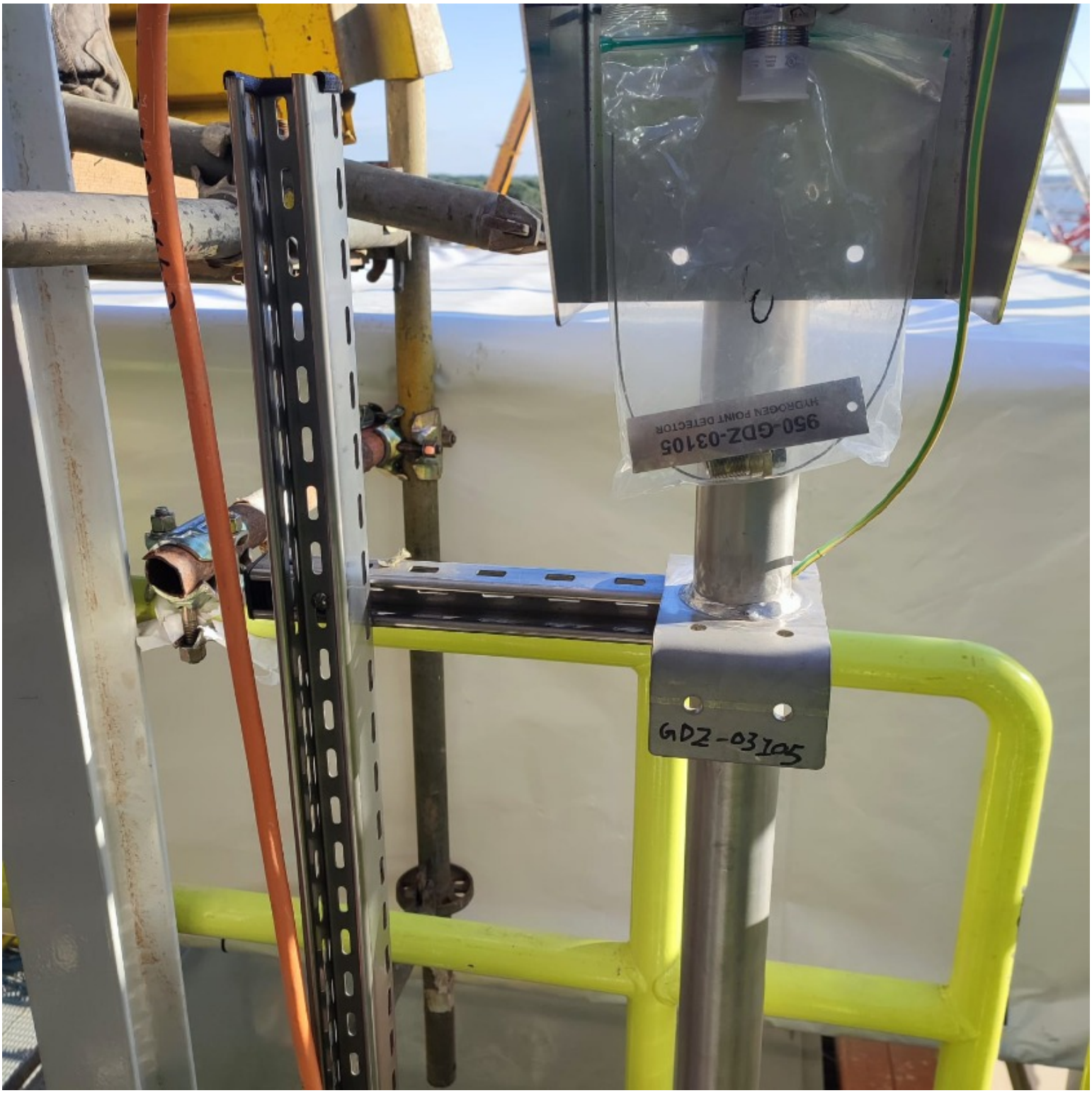
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


HYDROGEN POINT DETECTOR
950-GDZ-03105
GDZ-03105

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002822

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001539	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03105	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

ATEX certified plug is missing - See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

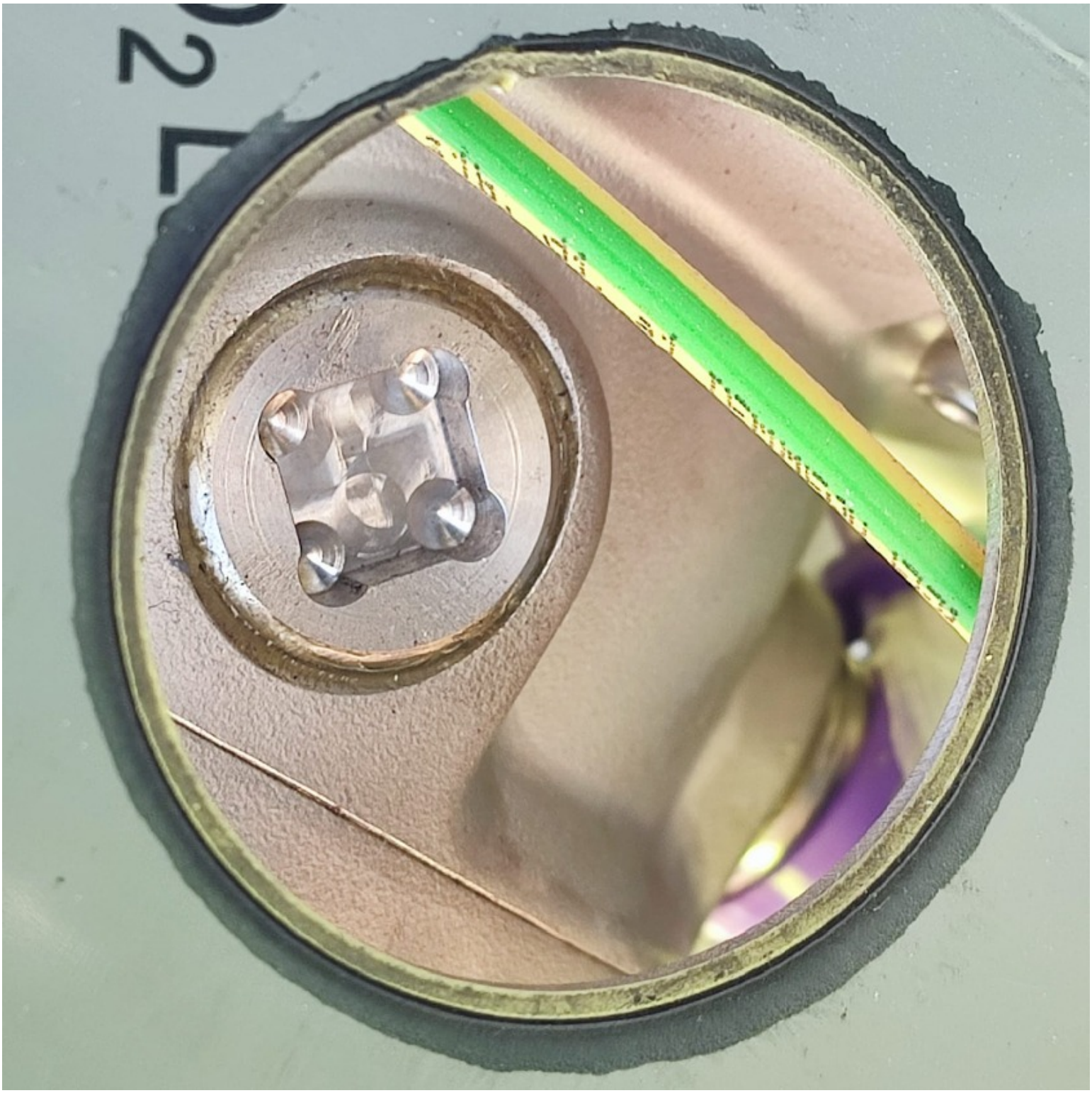
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002824

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002426	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03104/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Identification wire tags is missing inside the instrument (950-GDZ--03101). See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

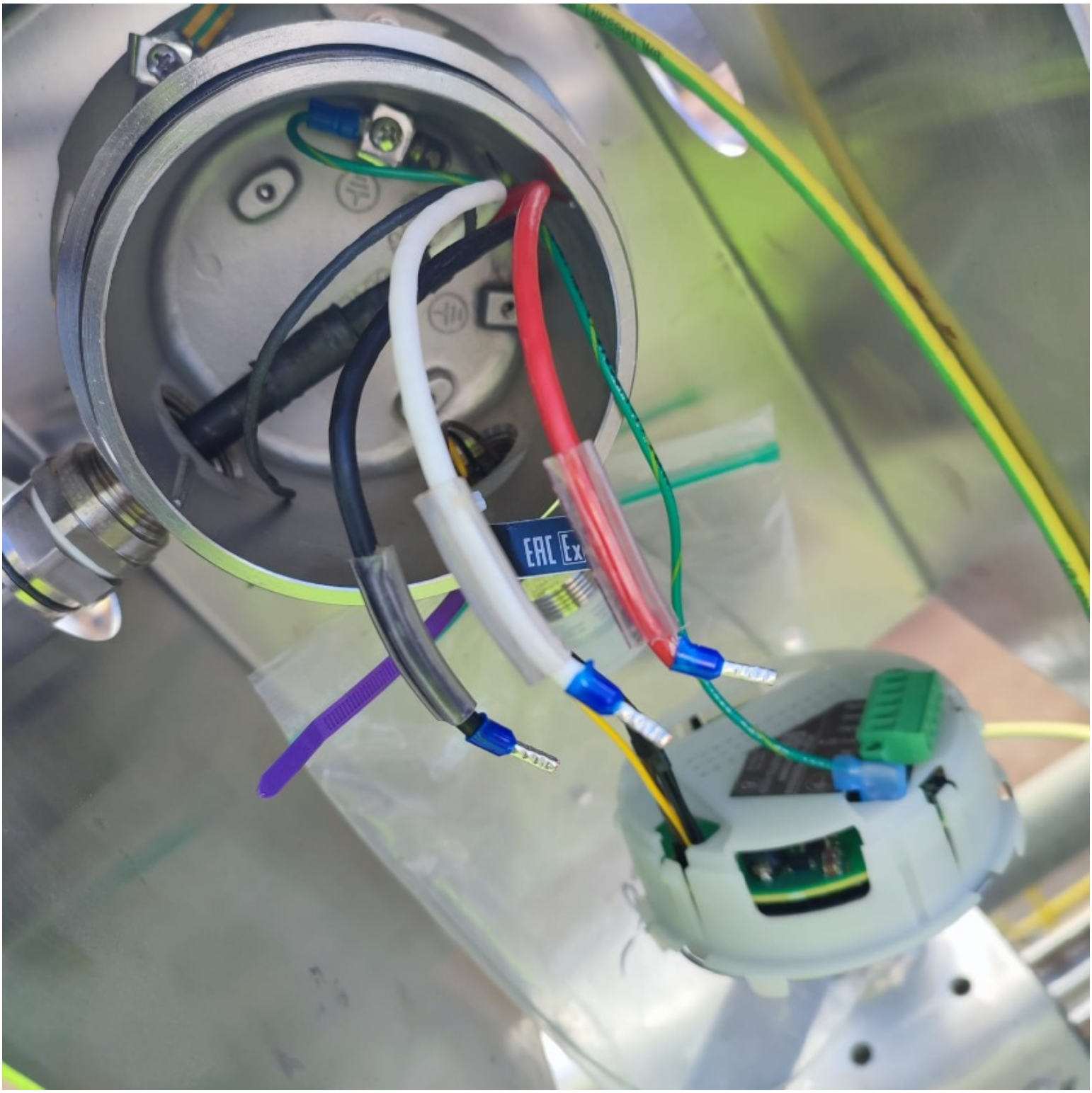
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


EAC Ex

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002825

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002426	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03104/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing identification wire tags inside the 950-JE-03101. See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-20

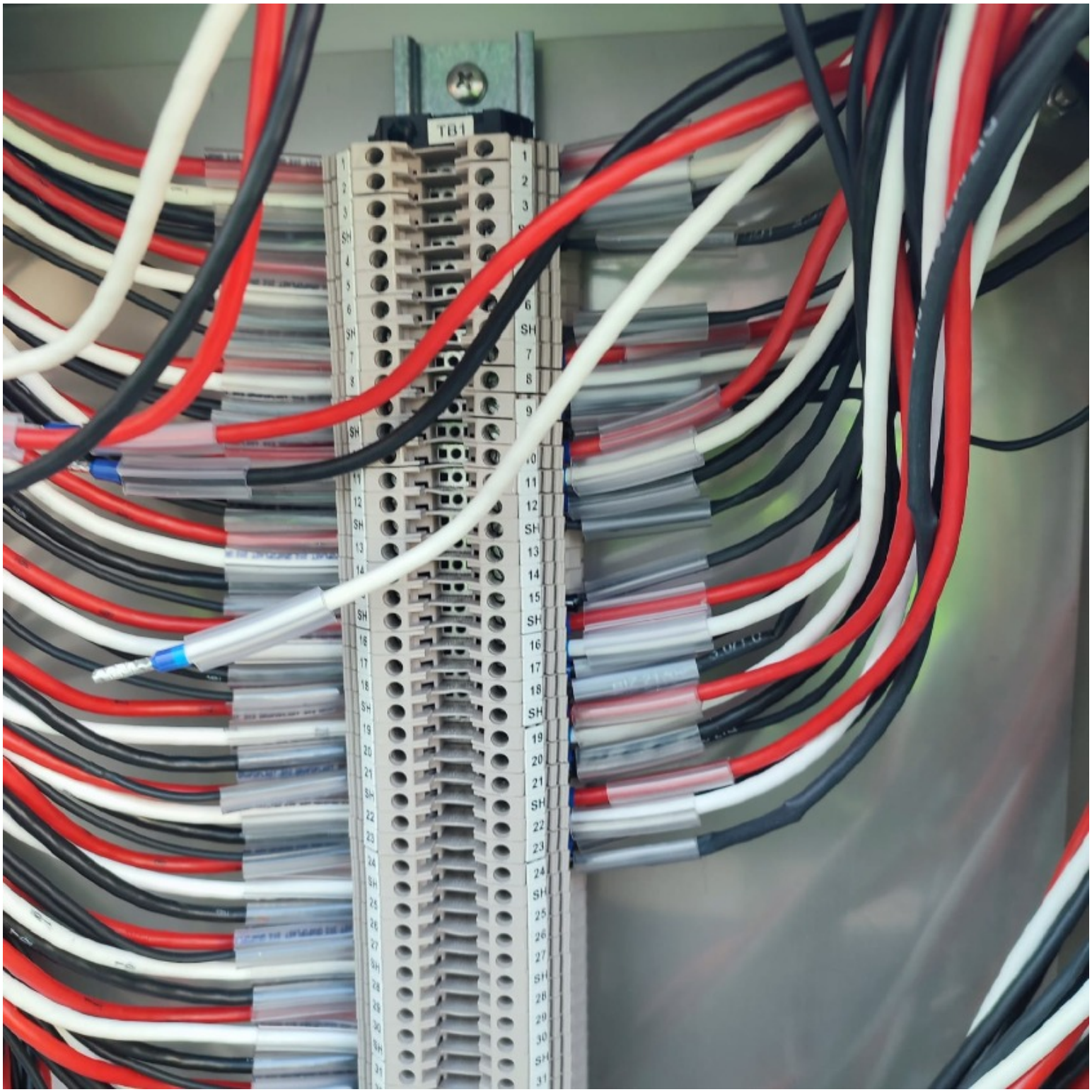
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TB1

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001648

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001559	1.4 Discipline	ATEX
1.2 Item	950-XZ-03102	FZ-03 Sounder Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001649

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001559	1.4 Discipline	ATEX
1.2 Item	950-XZ-03102	FZ-03 Sounder Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing the separation system between different materials. (between steel "support" and carbon steel "structure).

Name: Alessio Polo

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Alessio Polo

Date: 2024-12-17

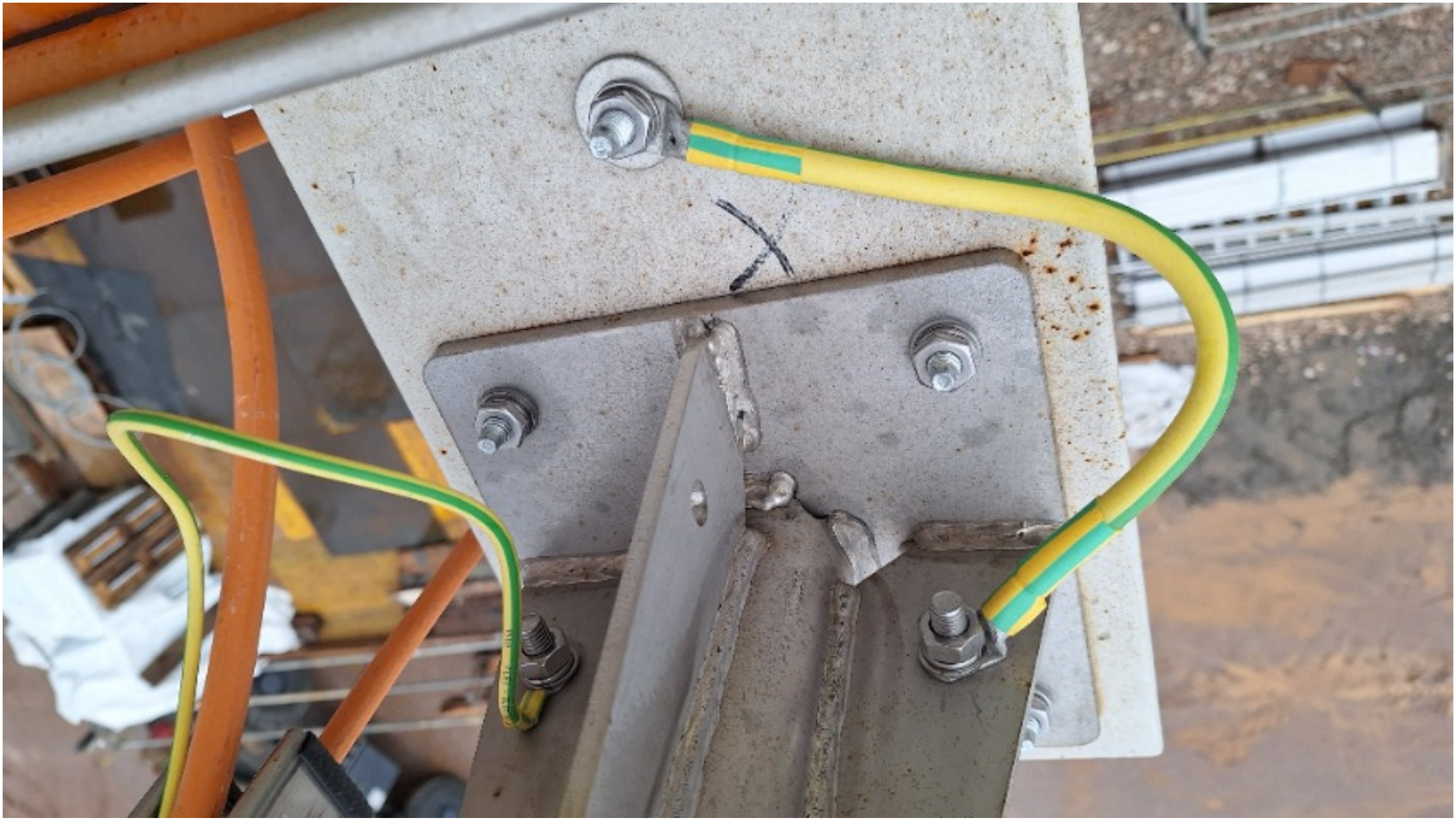
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



52

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001651

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001559	1.4 Discipline	ATEX
1.2 Item	950-XZ-03102	FZ-03 Sounder Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

52

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001652

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000328	1.4 Discipline	Instrumental
1.2 Item	C-950-XZ-03102/950-JE-03104	SOUNDER / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cables tag SS , side C-950-XZ-03102 / 950-JE-03104

Name: Alessio Polo

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-01-22

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001653

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001511	1.4 Discipline	ATEX
1.2 Item	950-FDZ-03104		Flame Detector - FZ-03 Electrolyzer PK Area
1.3 Subsystem	70-12		F&G Devices FZ-03 (Electrolyser Area)

2 - OBSERVATION

The tag tie is made of plastic. To be replaced in AISI

Name: Alessio Polo
Date: 2024-12-11
Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-02-25
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

950-FDZ-03104
FDZ-03104

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001654

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001511	1.4 Discipline	ATEX
1.2 Item	950-FDZ-03104	Flame Detector - FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TEREX

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001655

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001511	1.4 Discipline	ATEX
1.2 Item	950-FDZ-03104		Flame Detector - FZ-03 Electrolyzer PK Area
1.3 Subsystem	70-12		F&G Devices FZ-03 (Electrolyser Area)

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo
Date: 2024-12-11
Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

Name: Alessio Polo
Date: 2024-12-20
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


HKN
TEREX

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001656

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000300	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-03104/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Cable needs to be fixed in the secondary cable tray near instrument rack

Name: Paolo Schintu

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2025-01-02

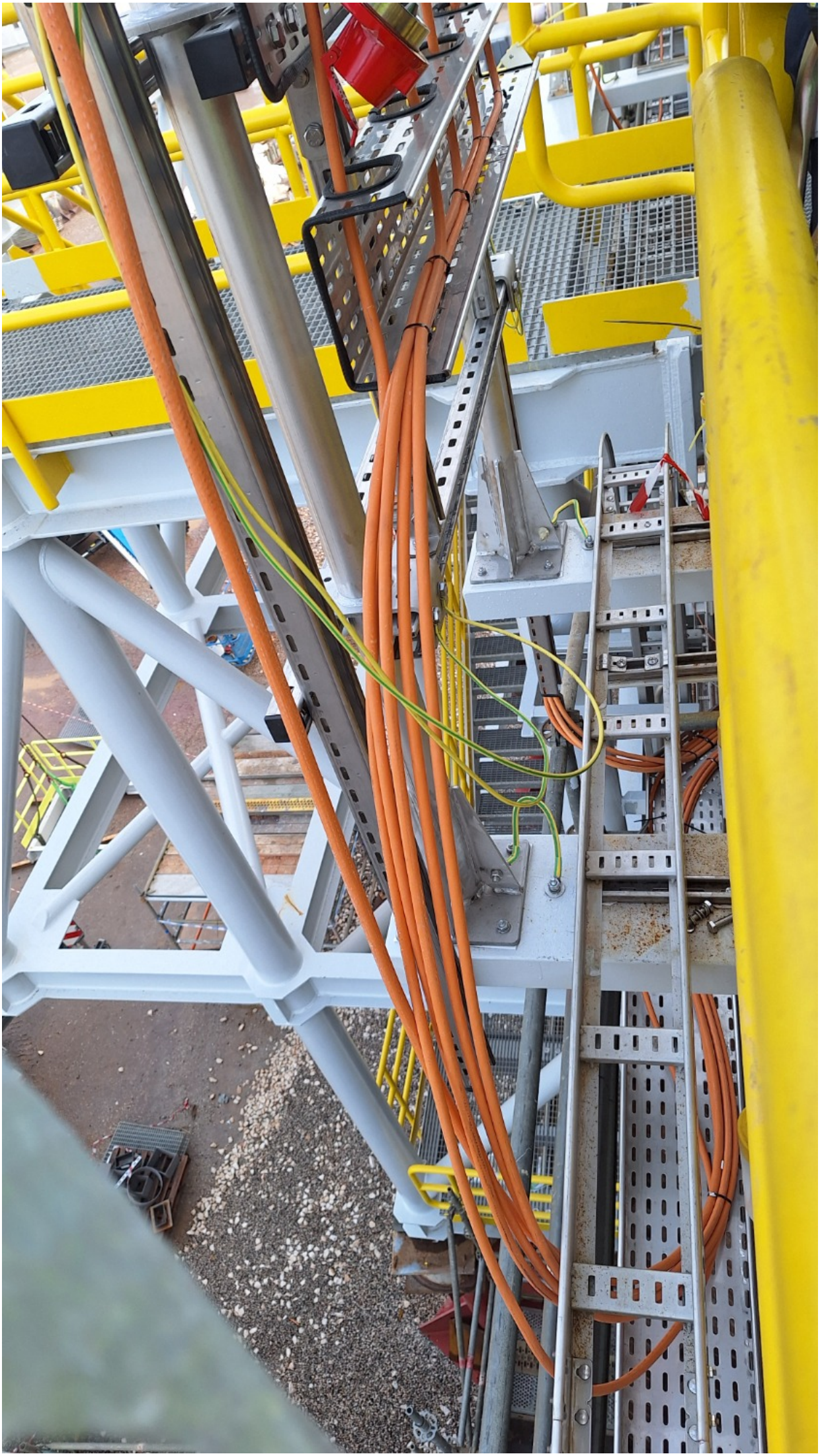
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001657

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001546	1.4 Discipline	ATEX
1.2 Item	950-MFA-03102	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001658

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001546	1.4 Discipline	ATEX
1.2 Item	950-MFA-03102	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing the separation system between different materials. (between steel "support" and carbon steel "structure).

Name: Alessio Polo
Date: 2024-12-11
Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

Name: Alessio Polo
Date: 2024-12-17
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001659

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000298	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-03102/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Cable needs to be fixed in the secondary cable tray near and under instrument rack

Name: Paolo Schintu

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2025-01-02

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001670

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001548	1.4 Discipline	ATEX
1.2 Item	950-MFA-03104	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TEREX

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001672

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001548	1.4 Discipline	ATEX
1.2 Item	950-MFA-03104	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Alessio Polo

Date: 2024-12-20

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


WARNING
TEREX

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001677

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002420	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-03103/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Core tag is missing for cable on instrument side and are wrong on JB side

Name: Andrea Andreani

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001678

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002420	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-03103/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

missing cable labelling on both JB and instrument side

Name: Andrea Andreani

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001679

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001510	1.4 Discipline	Instrumental
1.2 Item	950-FDZ-03103		Flame Detector - FZ-03 Electrolyzer PK Area
1.3 Subsystem	70-12		F&G Devices FZ-03 (Electrolyser Area)

2 - OBSERVATION

missing tag

Name: Andrea Andreani

Date: 2024-12-11

Signature:

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2024-12-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001720

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001559	1.4 Discipline	ATEX
1.2 Item	950-XZ-03102	FZ-03 Sounder Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cores identification tag. side 950-XZ-03102 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2024-12-12
Signature:

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	2024-12-12
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name
Date
Signature

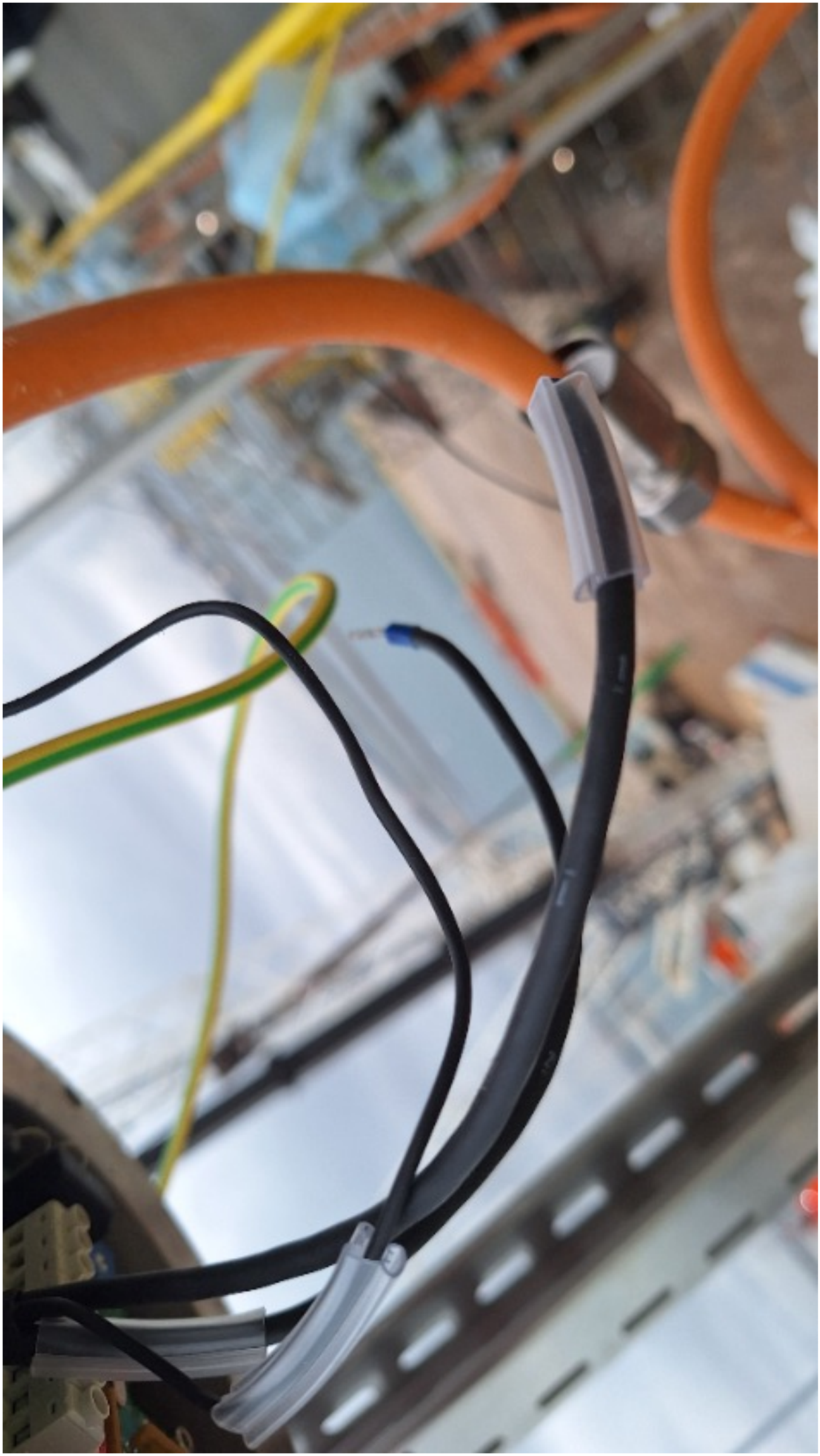
5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-04-08
Signature:

6- CLEARANCE APPROVAL

Name
Date
Signature



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001795

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001554	1.4 Discipline	ATEX
1.2 Item	950-XL-03103	FZ-03 Gas Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The protection cage of the instrument is damaged (it is not fixed)

Name: Alessio Polo

Date: 2024-12-13

Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-XL-03103

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001796

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001554	1.4 Discipline	ATEX
1.2 Item	950-XL-03103	FZ-03 Gas Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-13

Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001797

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001554	1.4 Discipline	ATEX
1.2 Item	950-XL-03103	FZ-03 Gas Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2024-12-13

Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001812

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001552	1.4 Discipline	Instrumental
1.2 Item	950-XL-03101	FZ-03 Gas Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2024-12-13

Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-MFA-03103

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001813

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001552	1.4 Discipline	Instrumental
1.2 Item	950-XL-03101	FZ-03 Gas Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing the separation system between different materials. (between steel "support" and carbon steel "structure).

Name: Alessio Polo
Date: 2024-12-13
Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

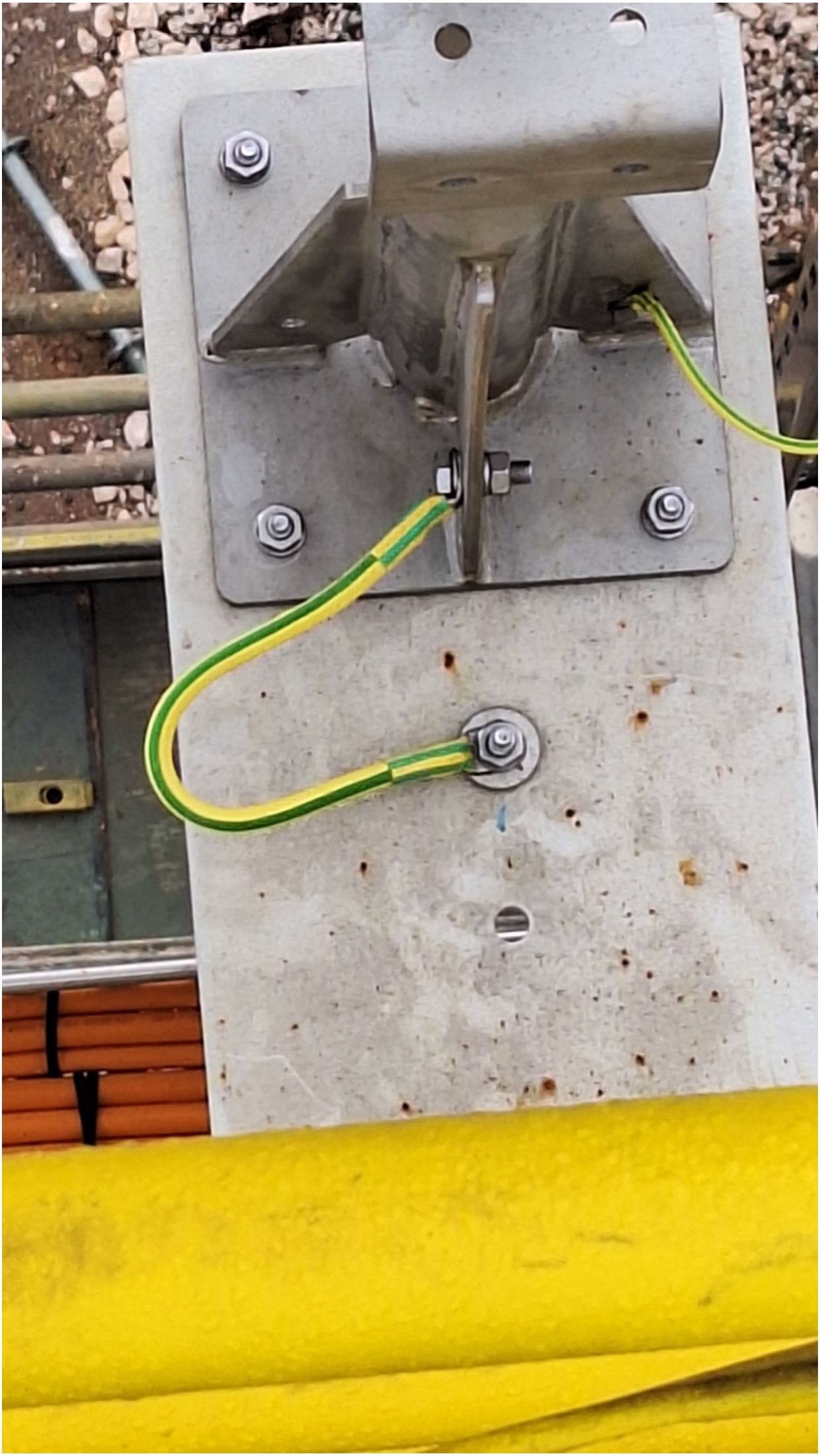
5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-01-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001814

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001552	1.4 Discipline	Instrumental
1.2 Item	950-XL-03101	FZ-03 Gas Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-13

Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001815

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001553	1.4 Discipline	Instrumental
1.2 Item	950-XL-03102	FZ-03 Fire Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2024-12-13

Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

MEDC
SERIES RESISTOR
E.O.L. RESISTOR

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001816

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001553	1.4 Discipline	Instrumental
1.2 Item	950-XL-03102	FZ-03 Fire Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing the separation system between different materials. (between steel "support" and carbon steel "structure).

Name: Alessio Polo
Date: 2024-12-13
Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

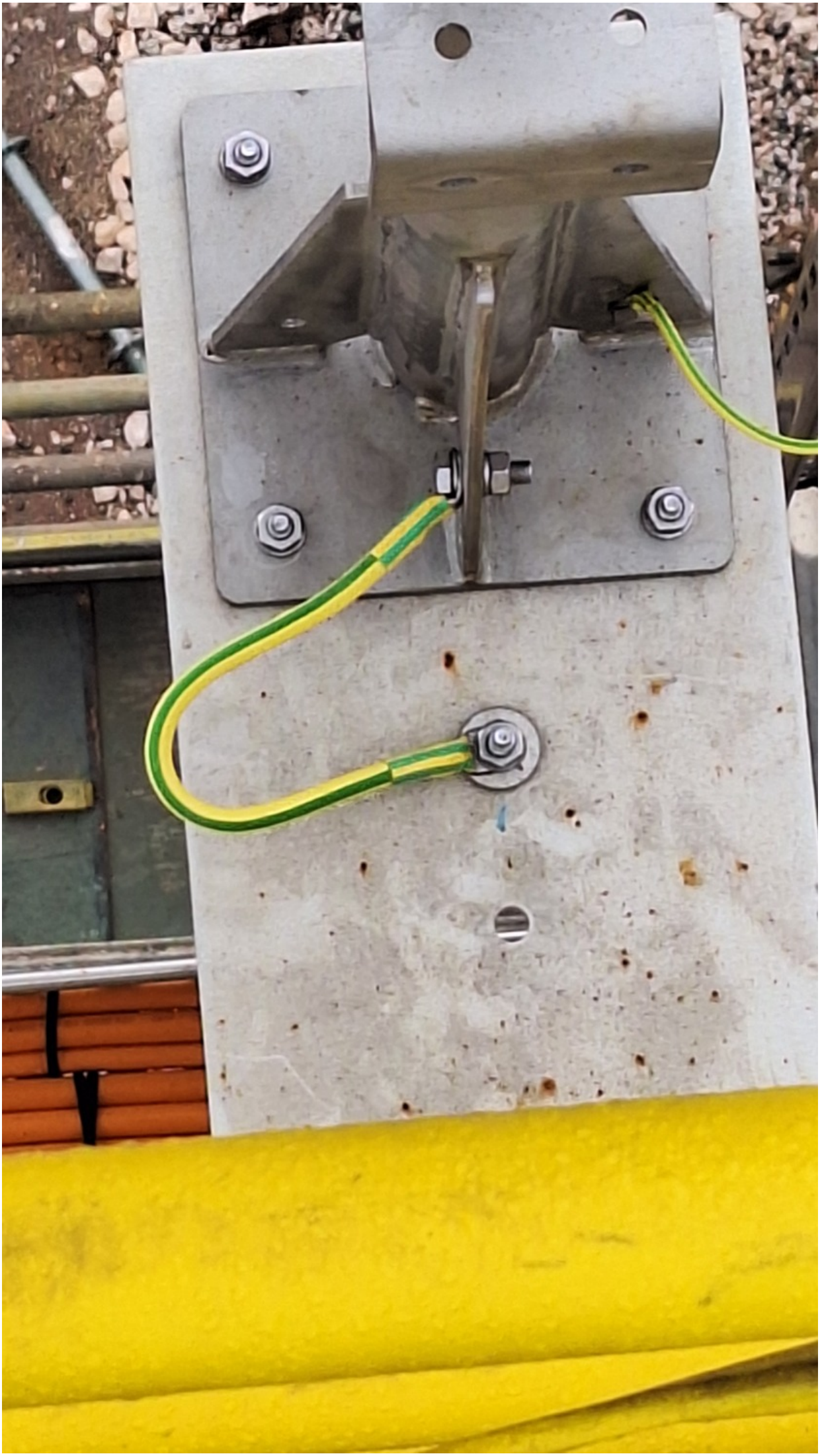
5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-01-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001817

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001553	1.4 Discipline	Instrumental
1.2 Item	950-XL-03102	FZ-03 Fire Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-13

Signature:

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	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001911

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000331	1.4 Discipline	Instrumental
1.2 Item	C-950-XL-03103/950-JE-03104	BEACON / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

All cables need to be better dressed inside internal cable tray.

Name: Alessio Polo

Date: 2024-12-16

Signature:

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	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-22

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001915

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000332	1.4 Discipline	Instrumental
1.2 Item	C-950-XL-03104/950-JE-03104	BEACON / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

All cables need to be better dressed inside internal cable tray. side 950-JE-03104

Name: Alessio Polo
Date: 2024-12-16
Signature:

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	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo
Date: 2025-01-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001927

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001555	1.4 Discipline	ATEX
1.2 Item	950-XL-03104	FZ-03 Fire Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-16

Signature:

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	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001929

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001555	1.4 Discipline	ATEX
1.2 Item	950-XL-03104	FZ-03 Fire Beacon Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo

Date: 2024-12-16

Signature:

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	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002325

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000231	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03108/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

On both instrument and JB side SS cable tag is missing

Name: Luca Mussi

Date: 2025-01-03

Signature:

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	2025-01-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-02

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002326

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000231	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03108/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

On both instrument and JB sides, core tags are missing for all wires

Name: Luca Mussi
Date: 2025-01-03
Signature:

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	2025-01-03
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Closed

Name: Raffaele Degli Esposti
Date: 2025-08-01
Signature:

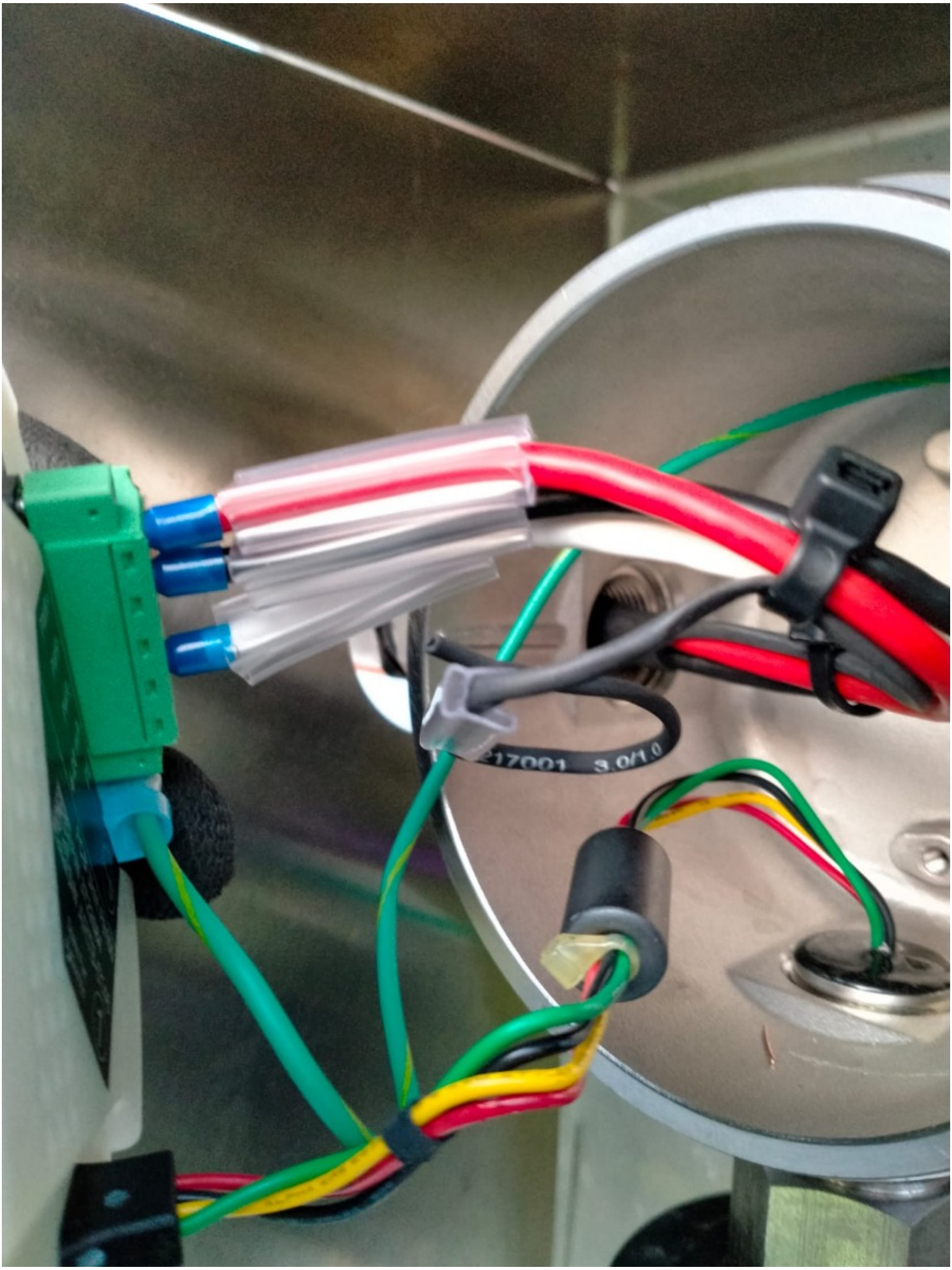
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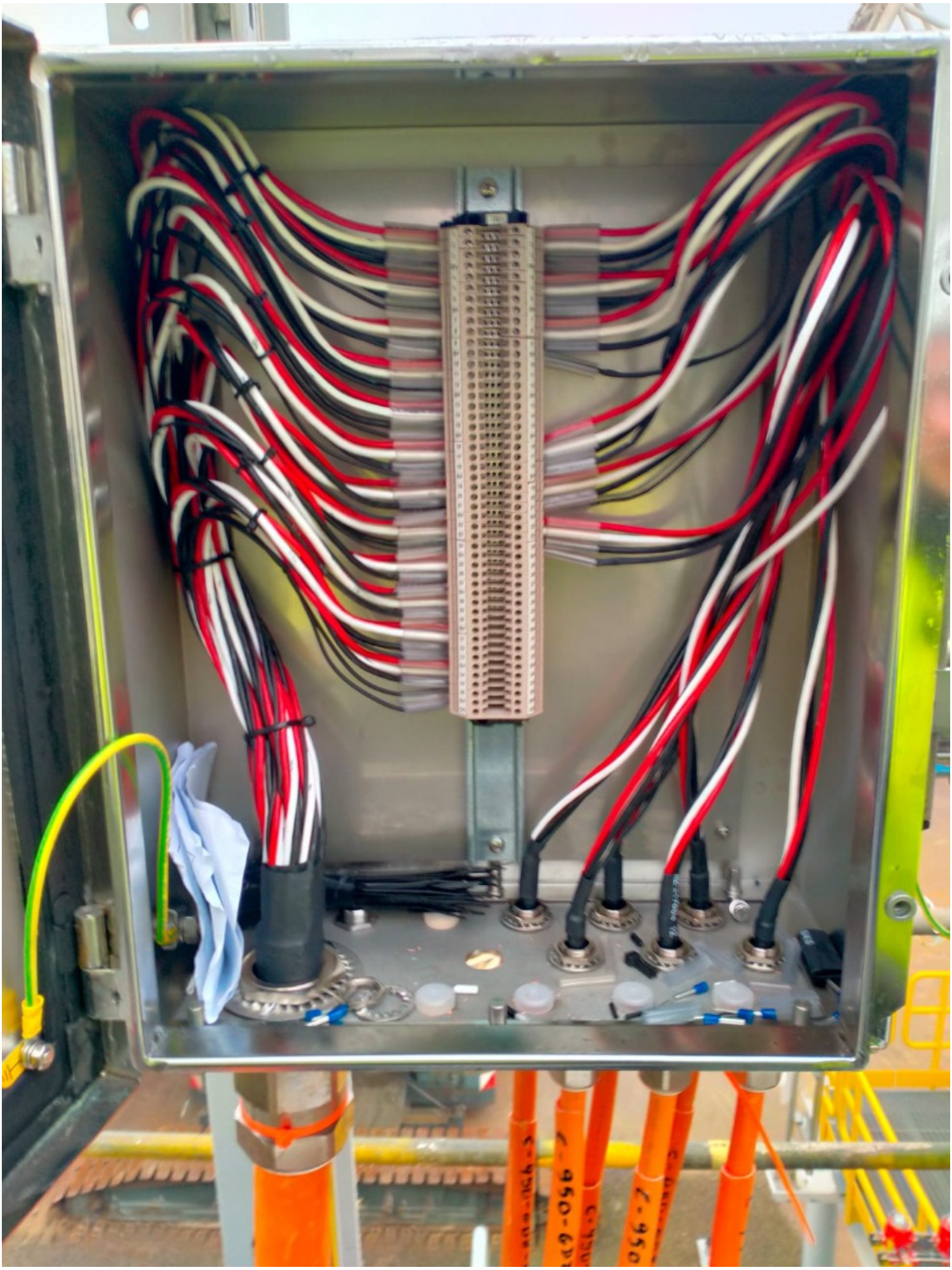
DONE

Name: Raffaele Degli Esposti
Date: 2025-08-01
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-08-01
Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002327

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000231	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03108/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Cable is entering the Light cable gland downwards while it should be upwards.

Name: Luca Mussi

Date: 2025-01-03

Signature:

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	2025-01-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-11

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002328

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000231	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03108/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The armour cone of the cable gland is fitted in the wrong direction

Name: Luca Mussi

Date: 2025-01-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

the activity is concluded.

Name: Giovanni Tangianu

Date: 2025-01-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002329

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000230	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03107/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

On both JB and instrument side, core identification tags are missing for all wires.

Name: Luca Mussi
Date: 2025-01-03
Signature:

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	2025-01-03
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Closed

Name: Raffaele Degli Esposti
Date: 2025-08-01
Signature:

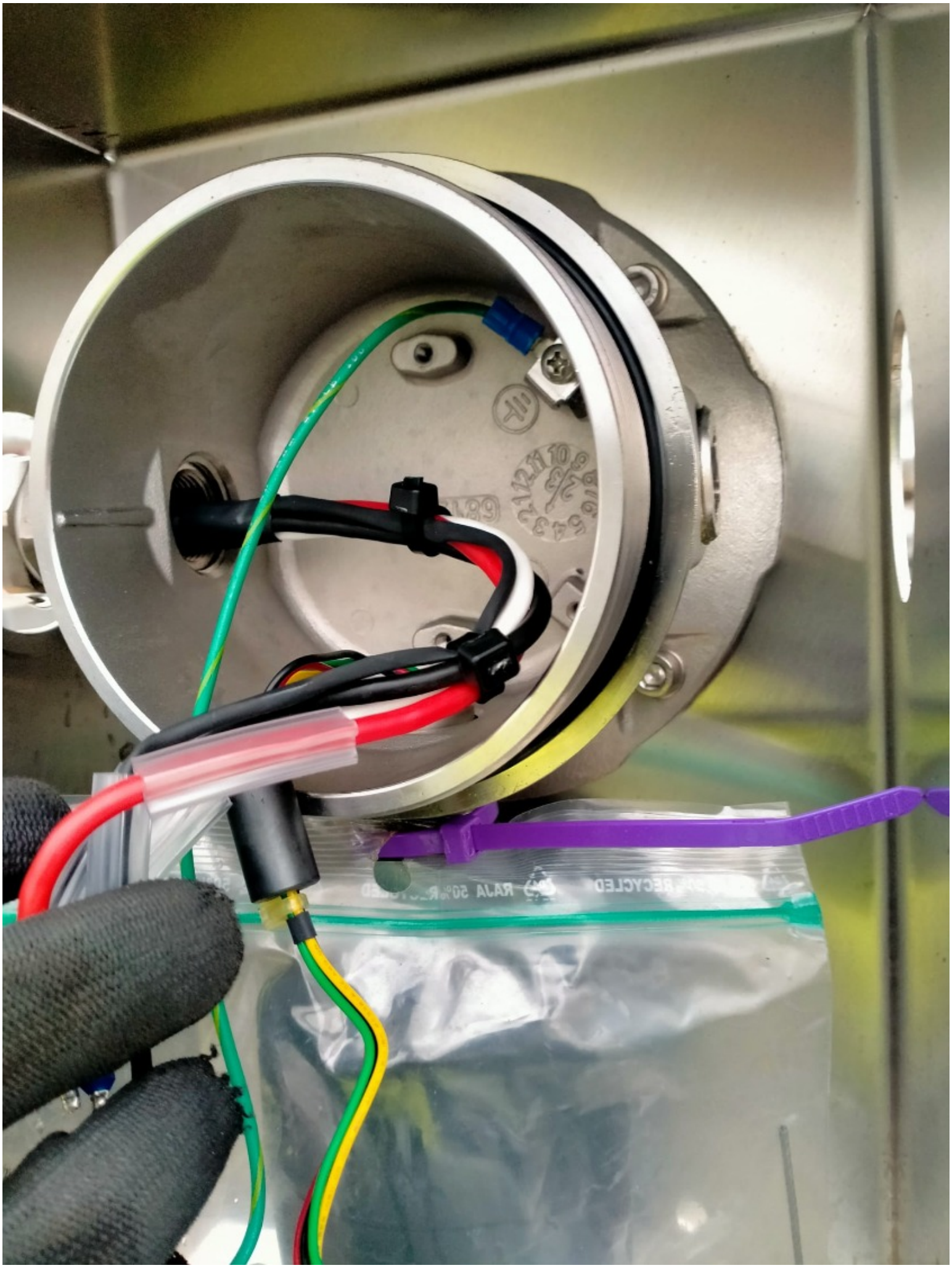
5 - CLEARANCE CHECK

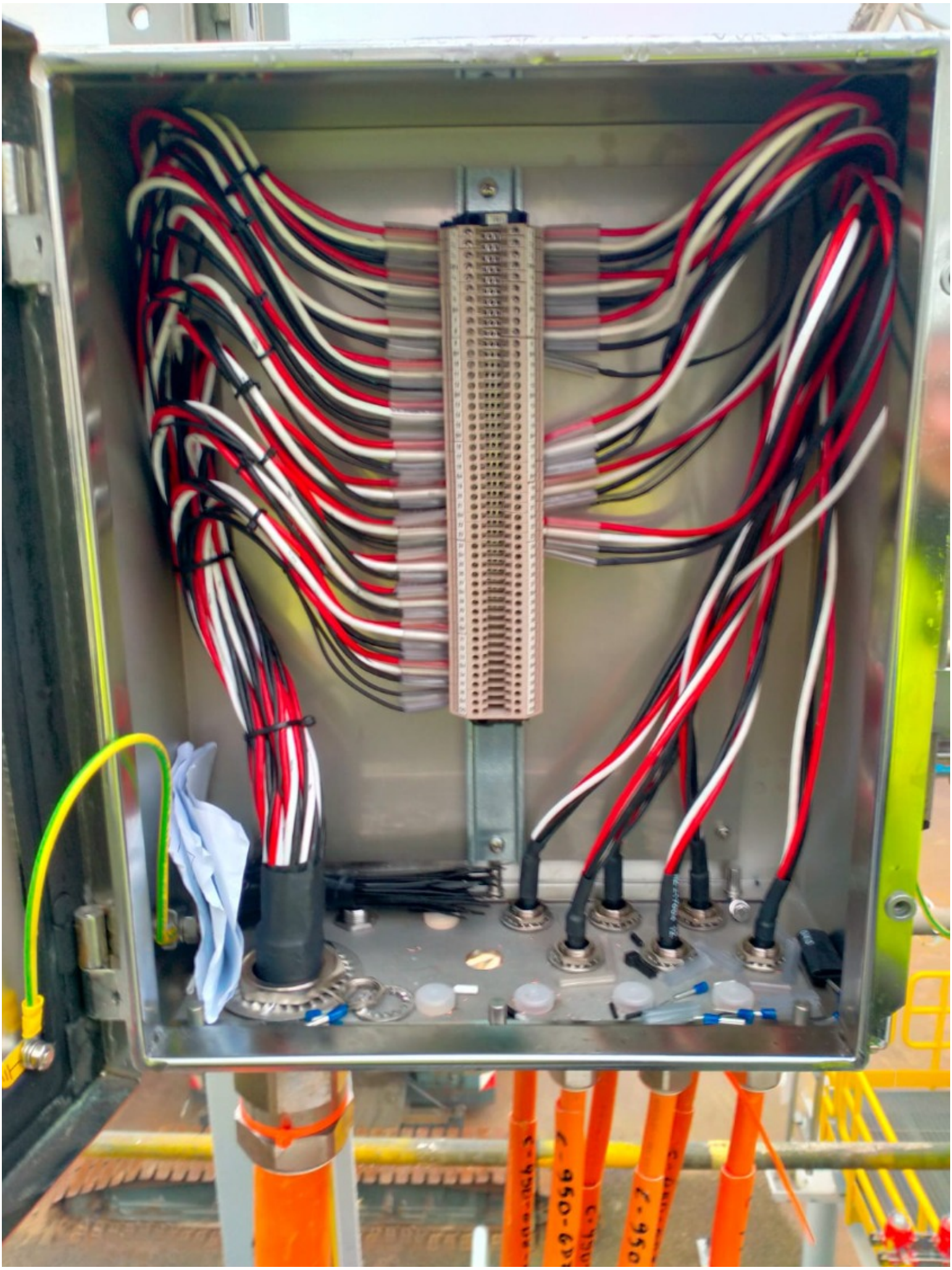
DONE

Name: Raffaele Degli Esposti
Date: 2025-08-01
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-08-01
Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002330

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000230	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03107/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

On both JB and instrument side, SS cable tag is missing

Name: Luca Mussi

Date: 2025-01-03

Signature:

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	2025-01-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:





ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002372

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001540	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03107	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Instrument earthing cable is missing.

Name: Luca Mussi

Date: 2025-01-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Connected.

Name: Giovanni Tangianu

Date: 2025-01-15

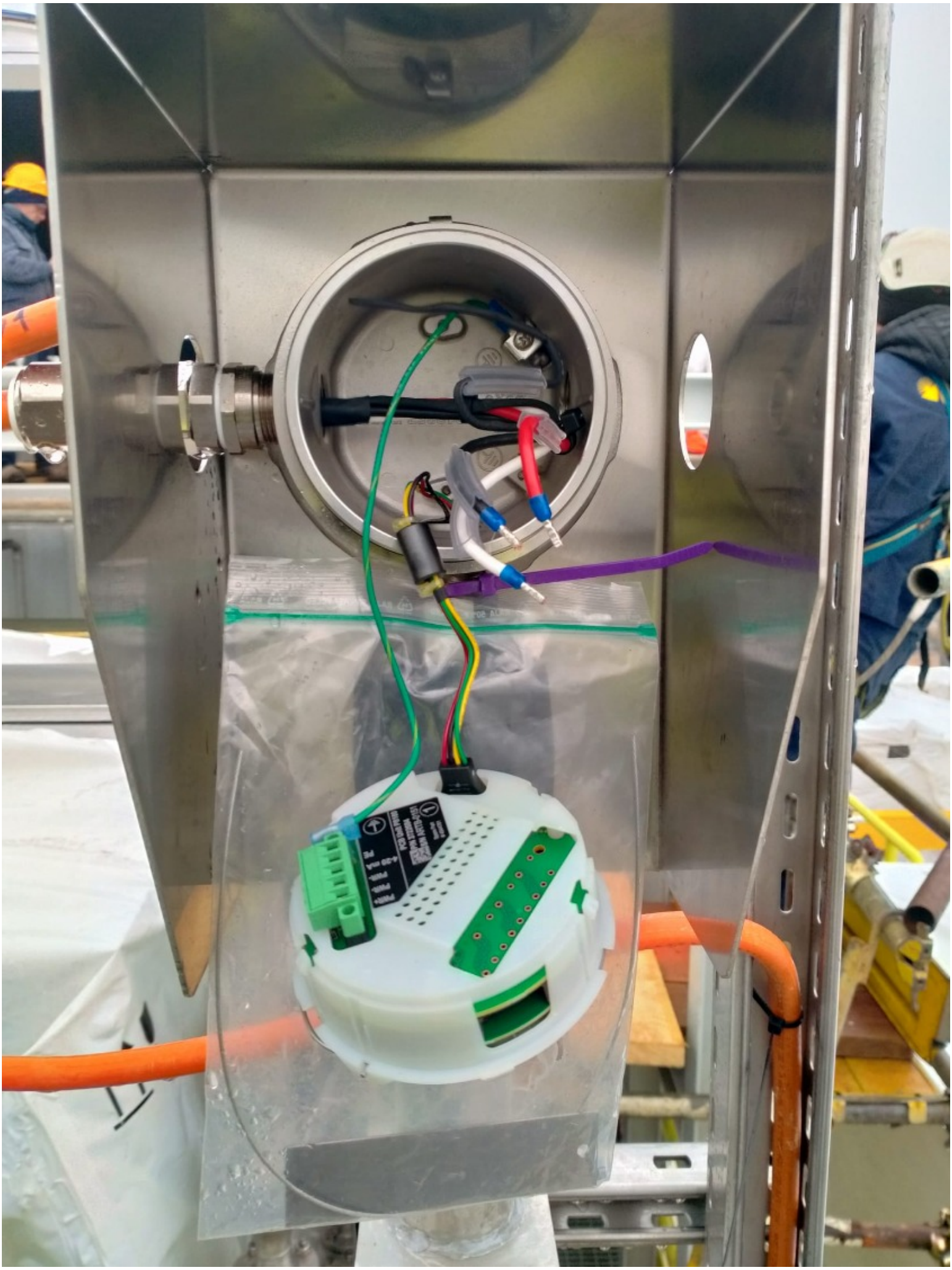
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002391

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001540	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03107		O2 DET. FZ-03 Electrolyzer PK Area
1.3 Subsystem	70-12		F&G Devices FZ-03 (Electrolyser Area)

2 - OBSERVATION

Plug is not ATEX-certified

Name: Luca Mussi

Date: 2025-01-07

Signature:

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	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-31

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

FIBERGUARD for Fi

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002393

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001540	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03107	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Hanging tag has not been installed

Name: Luca Mussi

Date: 2025-01-07

Signature:

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	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-GDZ-03107

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002410

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001541	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03108	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Instrument earthing cable is missing.

Name: Luca Mussi

Date: 2025-01-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-TE-03101
950-GDZ-03108

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002411

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001541	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03108	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Hanging tag of the instrument has not been installed.

Name: Luca Mussi

Date: 2025-01-07

Signature:

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	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


www.draeger-mo.com
FC4537339
Polytron 8000
OK

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002412

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001541	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03108		O2 DET. FZ-03 Electrolyzer PK Area
1.3 Subsystem	70-12		F&G Devices FZ-03 (Electrolyser Area)

2 - OBSERVATION

Instrument has not been installed at 2250 mm as per 123A90-DDL-IN-DD-40017 rev. 01 sheet 33.

Name: Luca Mussi
Date: 2025-01-07
Signature:

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	2025-01-07
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date: 2025-04-07
Signature:

5 - CLEARANCE CHECK

The document has been updated.

Name: Giovanni Tangianu
Date: 2025-04-07
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-04-07
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001373

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001558	1.4 Discipline	Instrumental
1.2 Item	950-XZ-03101	FZ-03 Sounder Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001377

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001558	1.4 Discipline	Instrumental
1.2 Item	950-XZ-03101	FZ-03 Sounder Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The support on the sounder is monted reversed. See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-XZ-03101



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001378

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001558	1.4 Discipline	Instrumental
1.2 Item	950-XZ-03101	FZ-03 Sounder Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the ground is disconnected and the fixing bolt is missing on the (950-XZ-03101). See attached photo.

Name: Giovanni Tangianu
Date: 2024-12-05
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2024-12-30
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001382

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000327	1.4 Discipline	Instrumental
1.2 Item	C-950-XZ-03101/950-JE-03104	SOUNDER / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

"Identification tag wires missing side the C-950-XZ-03101).
"

Name: Giovanni Tangianu
Date: 2024-12-05
Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

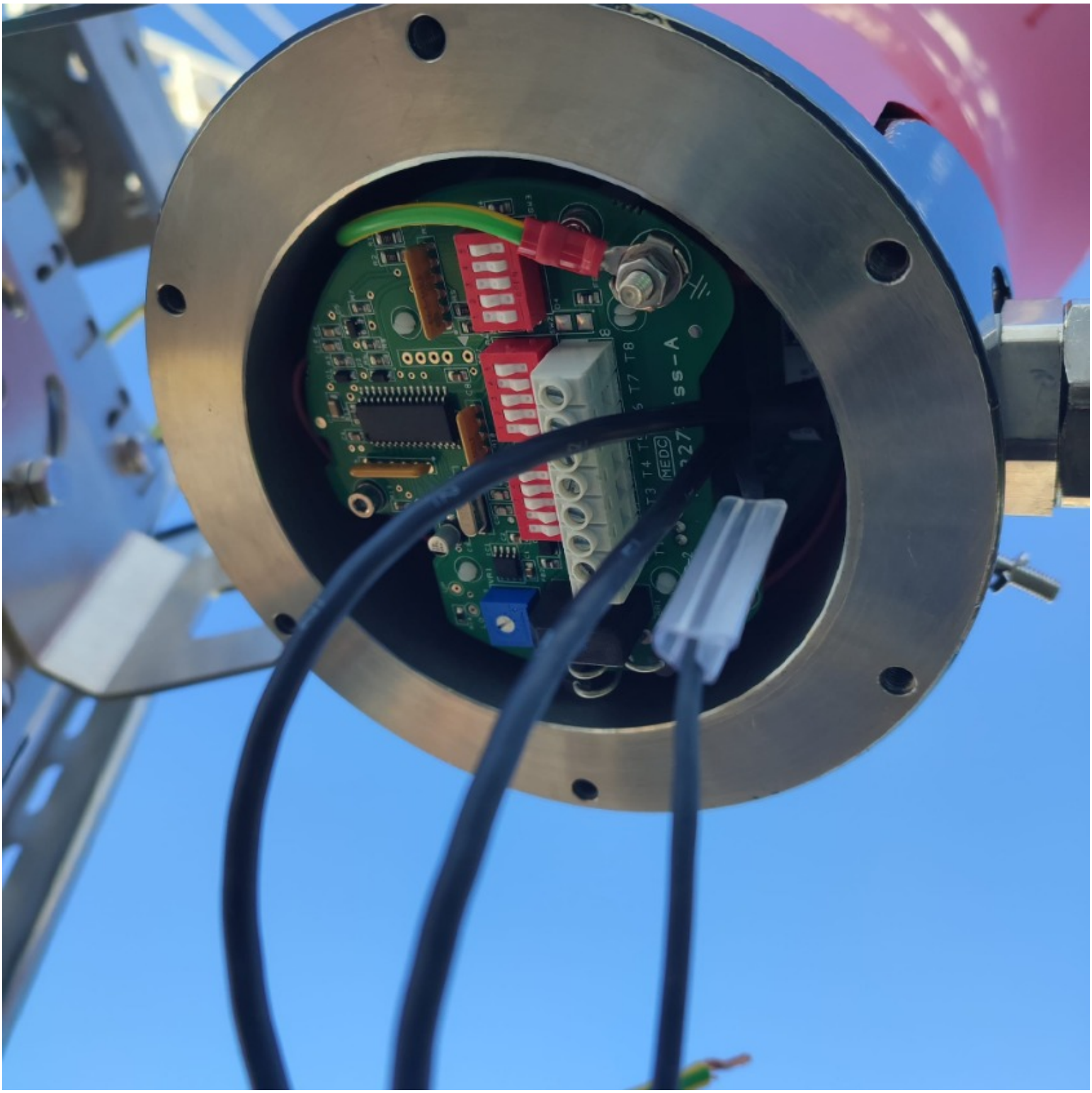
5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-04-08
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001383

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002419	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-03102/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Identification tag wires missing side the (950-FDZ-03102).

Name: Giovanni Tangianu
Date: 2024-12-05
Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-04-08
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001384

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001545	1.4 Discipline	Instrumental
1.2 Item	950-MFA-03101	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001385

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001545	1.4 Discipline	Instrumental
1.2 Item	950-MFA-03101	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Pole installation is not as per typical drawing 123A90-DDL-EL-DD-20091 rev 2 sheet 014 detail (it is not present the teflon sheet but teflon washers intead)

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-21

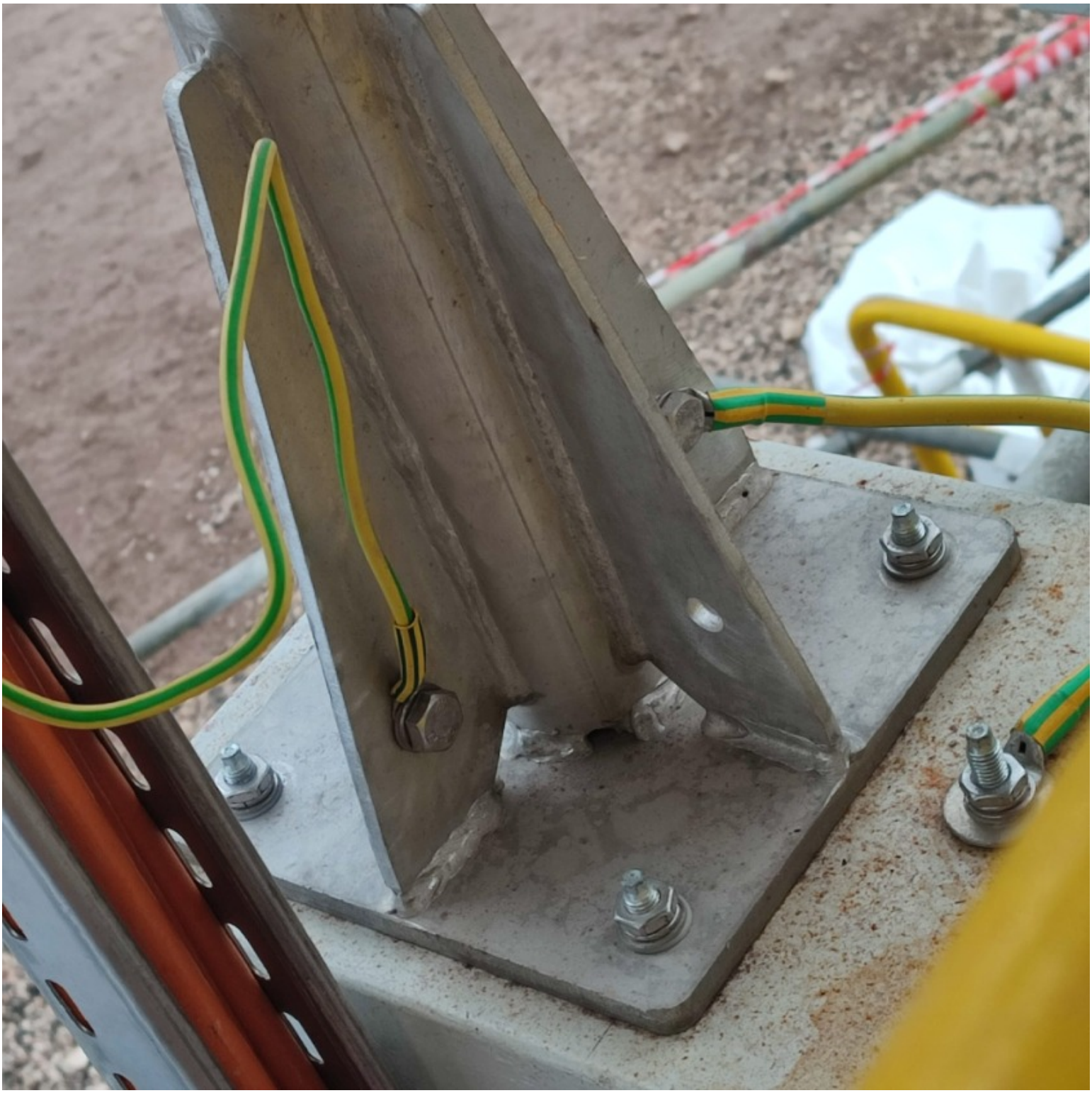
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001386

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001547	1.4 Discipline	Instrumental
1.2 Item	950-MFA-03103	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Pole installation is not as per typical drawing 123A90-DDL-EL-DD-20091 rev 2 sheet 014 detail (it is not present the teflon sheet but teflon washers intead)

Name: Giovanni Tangianu
Date: 2024-12-05
Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name
Date
Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-01-21
Signature

6- CLEARANCE APPROVAL

Name
Date
Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001387

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001547	1.4 Discipline	Instrumental
1.2 Item	950-MFA-03103	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

the support is not well secured against vibration. another bracket needs to be added.

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001388

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001545	1.4 Discipline	Instrumental
1.2 Item	950-MFA-03101	FZ-03 MFA Activation	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing one bolt on the cover instrument. (950-MFA-03101) see attached photo.

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2024-12-27

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature


MANUAL FIRE ALARM ACTIVATION
LIFT
FLAP
AND
PUSH

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001389

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000297	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-03101/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Identification tag wires missing side the (950-MFA-03101).

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

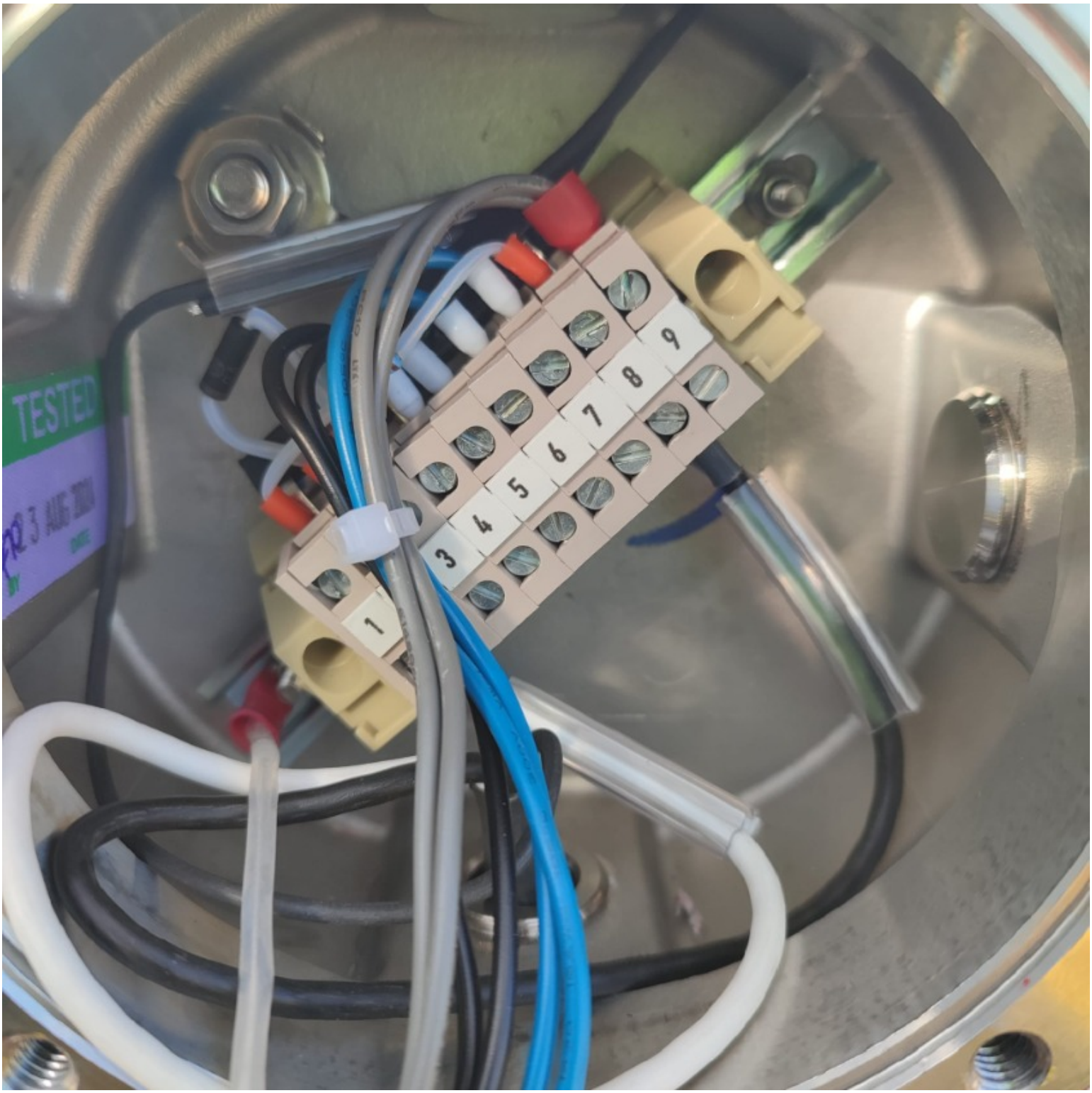
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TESTED
1
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ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001411

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001509	1.4 Discipline	Instrumental
1.2 Item	950-FDZ-03102		Flame Detector - FZ-03 Electrolyzer PK Area
1.3 Subsystem	70-12		F&G Devices FZ-03 (Electrolyser Area)

2 - OBSERVATION

Instrument tag SS is not installed .

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001639

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002421	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-03104/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing SS cable tag

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001640

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002421	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-03104/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing core identification tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001641

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000298	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-03102/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing SS cable tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001642

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000298	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-03102/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing core identification tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001643

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000300	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-03104/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing core identification tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001644

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000300	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-03104/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing SS cable tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2024-12-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002826

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002426	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03104/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cable tag side the instrument 950-GDZ-03104.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002827

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002426	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03104/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cable tag side the 950-JE-03101.See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002828

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002427	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03105/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Identification wire tags is missing inside the instrument (950-GDZ--03105). See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

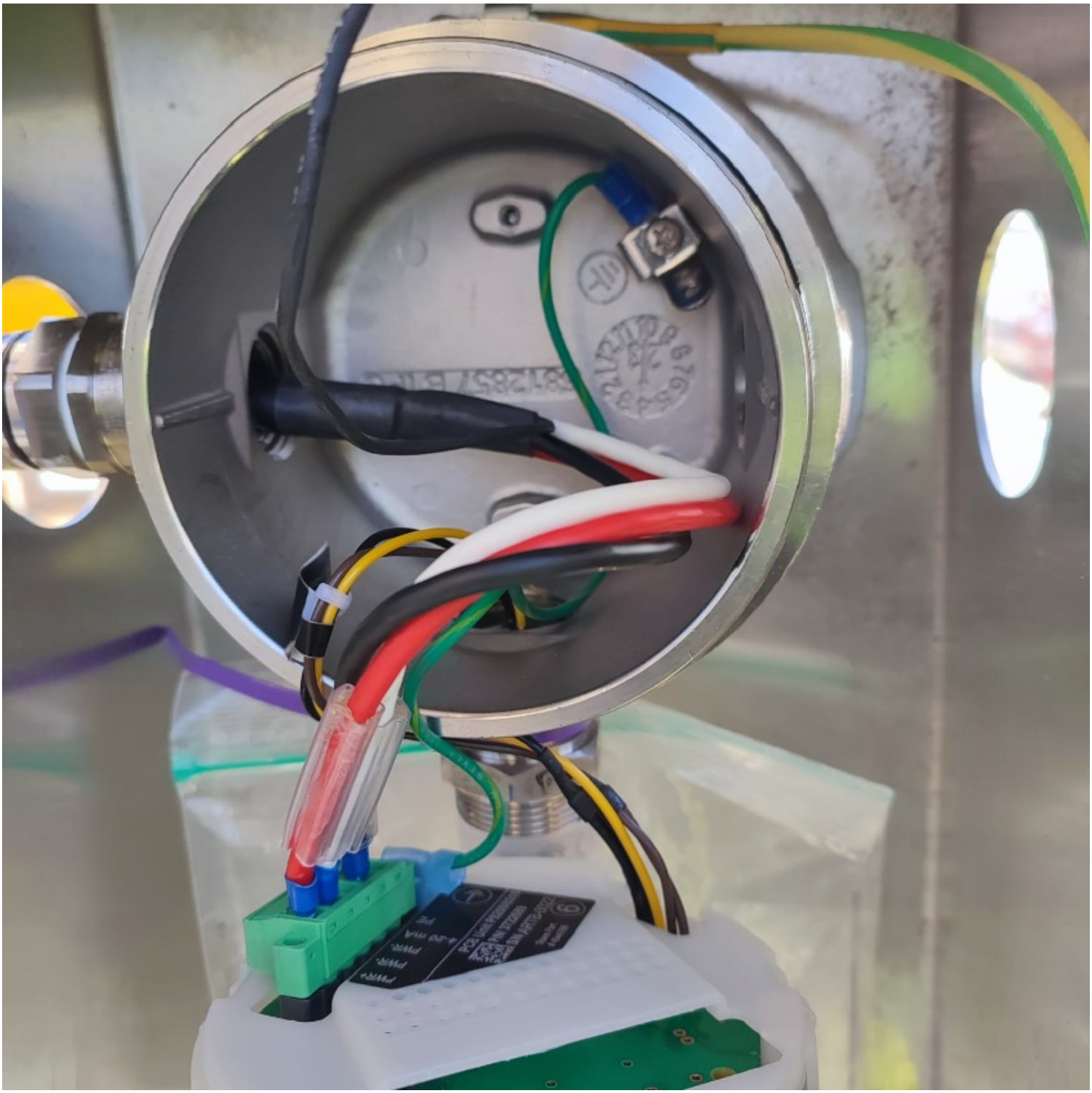
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6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002829

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002427	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03105/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Inside the instrument missing the termoshrink on the sheild . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-15

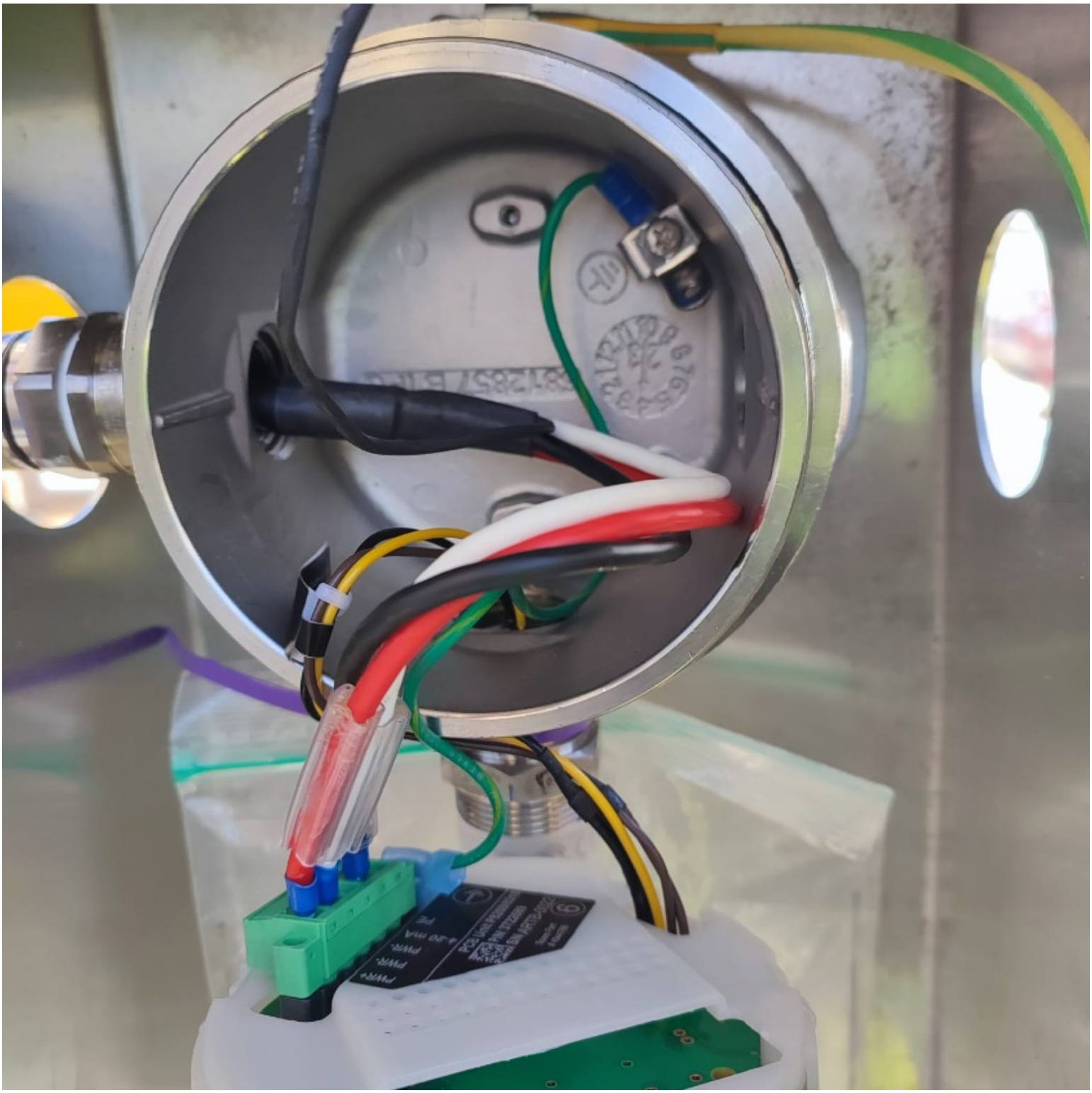
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6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002830

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002427	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03105/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing the identification cable tag both side C-950-GDZ-03105/950-JE-03101.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002831

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002427	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03105/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing earthing jumper connection on the secondary cabletray.
See attached photo.

Name: Giovanni Tangianu
Date: 2025-01-14
Signature:

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	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

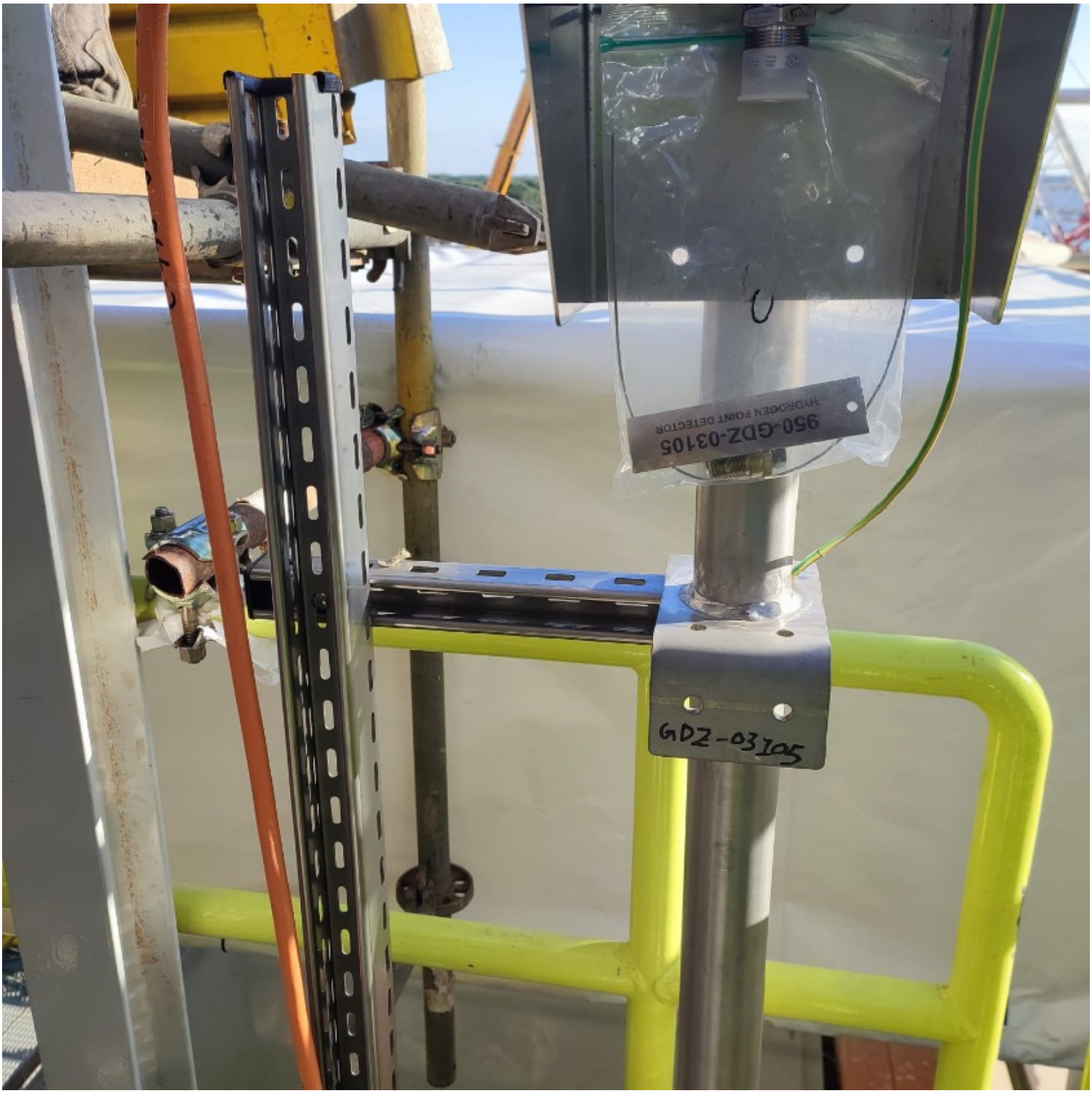
5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-02-04
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


HYDROGEN POINT DETECTOR
950-GDZ-03105
GDZ-03105

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004249

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003108	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

CALIBRATION AND TEST CRITERIA TO BE DEFINED, THIS PUNCH ITEM WILL BE VALID FOR ALL H2 GAS LEAK DETECTORS.

Name: Anthony Iveson
Date: 2025-03-19
Signature:

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal	BACKGROUND NOISE SOUND MEASUREMENT CAMPAIGN TO BE PERFORMED IN ALL INSTRUMENT LOCATIONS.		
3.2 Material required			
3.3 Priority	B PL B	Name	Anthony Iveson
3.4 Activity code	COMM Commissioning	Date	2025-03-19
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Continuous measurements recorded during the commissioning phase to identify the lowest background noise interference whilst maintaing the highest sensitivity of the leak detectors.
The final configuration for all detectors is as follws:
- pre allarm 64dB
- trip 70 dB

Name: Anthony Iveson
Date: 2025-07-17
Signature:

5 - CLEARANCE CHECK

DONE

Name: Anthony Iveson
Date: 2025-07-17
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-17
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002551

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001542	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The internal PVC fixing system are damaged.

Name: Alessio Polo
Date: 2025-01-09
Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Vendor confirm that the functionality and installation of sensor are not compromise.

Name: Giovanni Tangianu
Date: 2025-01-15
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002552

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001542	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing the earth connection on the instrument and plate block/fixing

Name: Alessio Polo

Date: 2025-01-09

Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002553

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001542	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

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. 29).

Name: Alessio Polo
Date: 2025-01-09
Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-01-29
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002554

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001542	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The support is not well secured against vibration. another bracket needs to be added.

Name: Alessio Polo
Date: 2025-01-09
Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

Name: Giovanni Tangianu
Date: 2025-03-07
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002555

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001542	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2025-01-09

Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

INSTALLED

Name: Eleonora Carotenuto

Date: 2025-02-24

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002556

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001542	1.4 Discipline	ATEX
1.2 Item	950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Fix the instrument tag with AISI wire.

Name: Alessio Polo

Date: 2025-01-09

Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-GDZ-03109
OXYGEN POINT DETECTOR

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002563

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000232	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03109/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cable tag SS , near the instrument and JB

Name: Alessio Polo

Date: 2025-01-09

Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002564

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000232	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03109/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cores identification tag. C-950-GDZ-03109 / JB 950-JE-03101 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2025-01-09
Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-04-08
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002572

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000232	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03109/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Armor cone has been reversed. Grooved side of cone outwards - to terminate braid.

Name: Alessio Polo

Date: 2025-01-09

Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

the cone is properly installed.

Name: Giovanni Tangianu

Date: 2025-01-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002574

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000232	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03109/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Cable routing to the item/equipment shall be done in order to prevent drop-off (cable shall route lower than cable gland so that any drop of condensation or water due to atmospheric causes will drains downwards).

Name: Alessio Polo
Date: 2025-01-09
Signature:

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	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done.

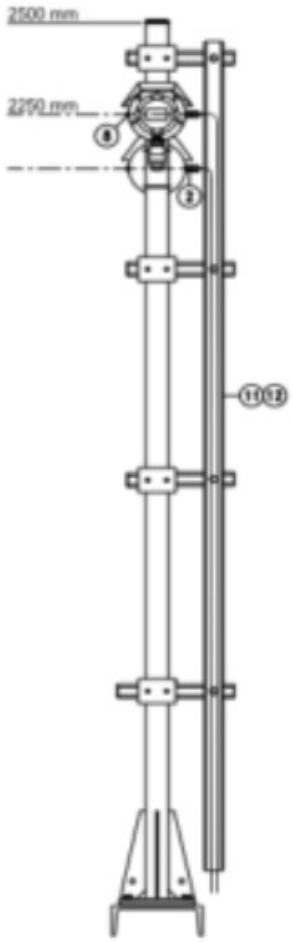
Name: Giovanni Tangianu
Date: 2025-01-15
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

Rev. 02

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02109
	950-GDZ-02118
2	950-GDZ-02110
	950-GDZ-03108
3	950-GDZ-02112
	950-GDZ-03109
4	950-GDZ-02113
5	950-GDZ-02114
6	950-GDZ-02115
7	950-GDZ-02116

NOTE:

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-HD-40079**

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

ROSETTI MARINO SpA

10) CABLE ROUTING TO THE ITEM/EQUIPMENT SHALL BE DONE IN ORDER TO PREVENT DROP-OFF (CABLE SHALL ROUTE LOWER THAN CABLE GLAND SO THAT ANY DROP OF CONDENSATION OR WATER DUE TO ATMOSPHERIC CAUSES WILL DRAINS DOWNWARDS).

11) ALL UNARMOURED CABLES SHALL BE MECHANICAL PROTECTED FOR THE ENTIRE CABLE LENGTH

	TITLE : BASE LOAD POWER HUB (BLPH) ELECTRICAL TYPICAL INSTALLATION DETAILS-CABLE ROUTES SYSTEM SUMMARY and GENERAL NOTES		
PTED FOR CONSTRUCTION (AFC)			
PTED FOR CONSTRUCTION (AFC)	CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE : NTS
FOR REVIEW (IFR)	A3	DRAWING NO. 123A90-DDL-EL-DD-20093	SHEET 002 / REV. 02
DESCRIPTION			

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002577

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000232	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-03109/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Doc: On Instrument side, an adaptor is present on tha cable gland (the adaptor is not present on the cable list)

Name: Alessio Polo
Date: 2025-01-10
Signature:

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	2025-01-10
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Point not applicable

Name: Eleonora Carotenuto
Date: 2025-02-04
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002740

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002418	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-03101/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing cable tag SS , near the instrument C-950-FDZ-03101 / JB 950-JE-03102.

Name: Alessio Polo

Date: 2025-01-13

Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002741

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002418	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-03101/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

The cable is not adequately correctly fixed to the cable tray.

Name: Alessio Polo
Date: 2025-01-13
Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

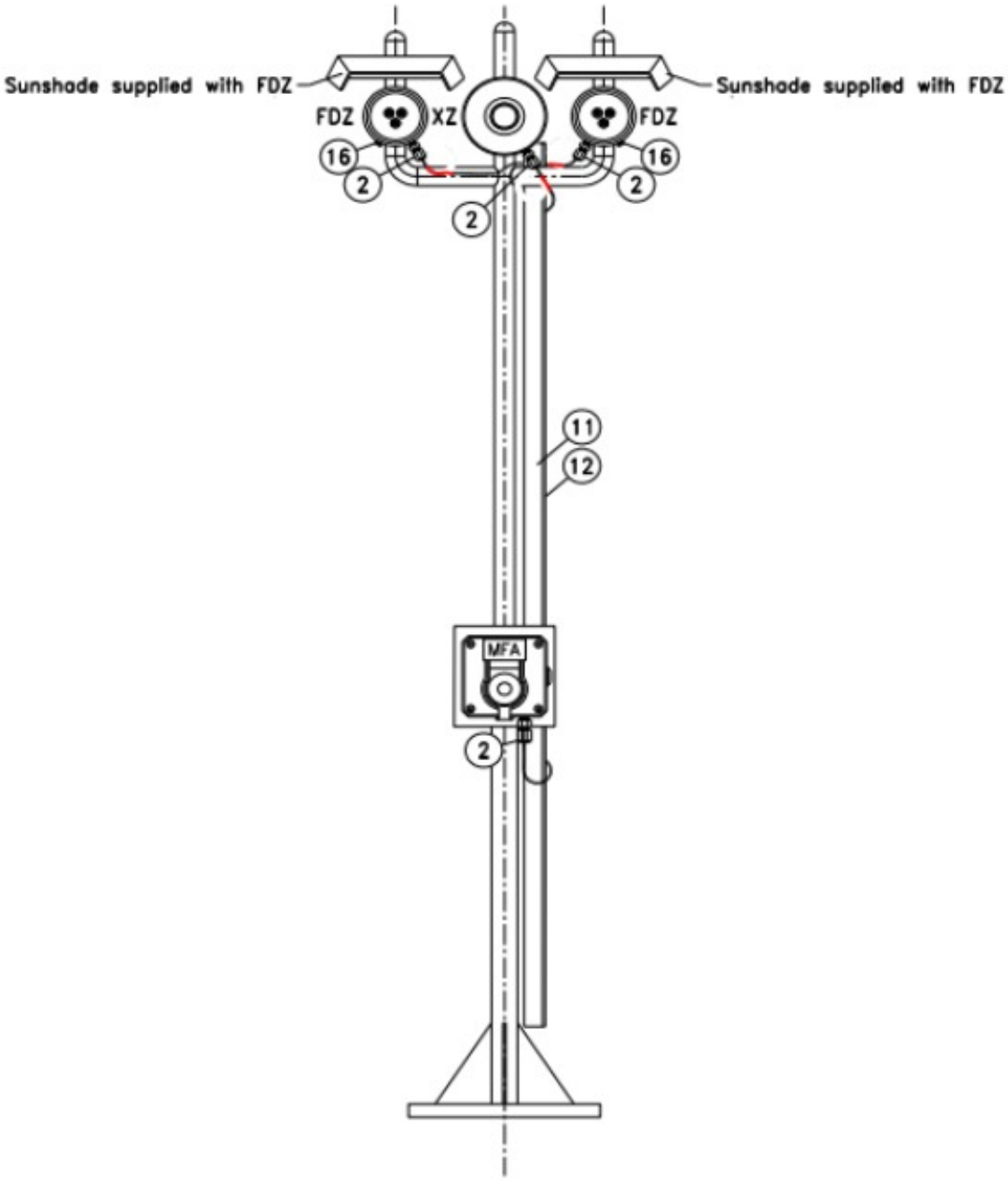
Name: Andrea Andreani
Date: 2025-01-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


950-MFA-03102

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-FDZ-01102
	950-XZ-01102
	~~950-FDZ-02101~~
	950-MFA-01102
2	950-FDZ-02102
	950-XZ-03102
	950-FDZ-03101
	950-MFA-03102
3	950-FDZ-03103
	950-XZ-03101
	950-FDZ-02104
	950-MFA-03101

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002742

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001508	1.4 Discipline	ATEX
1.2 Item	950-FDZ-03101	Flame Detector - FZ-03 Electrolyzer PK Area	
1.3 Subsystem	70-12	F&G Devices FZ-03 (Electrolyser Area)	

2 - OBSERVATION

Missing Weather Shield

Name: Alessio Polo

Date: 2025-01-13

Signature:

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	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

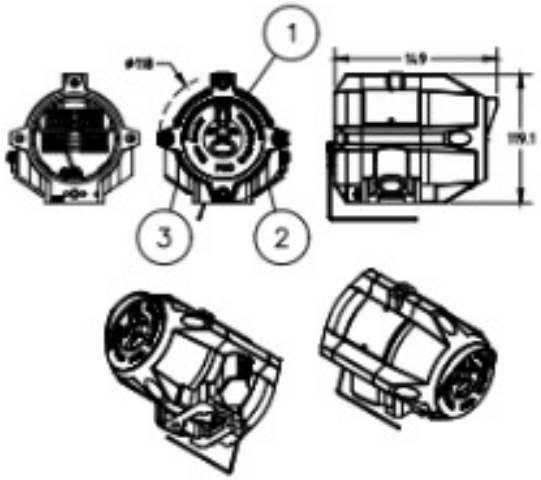

950-MFA-03102
VERNAZZA

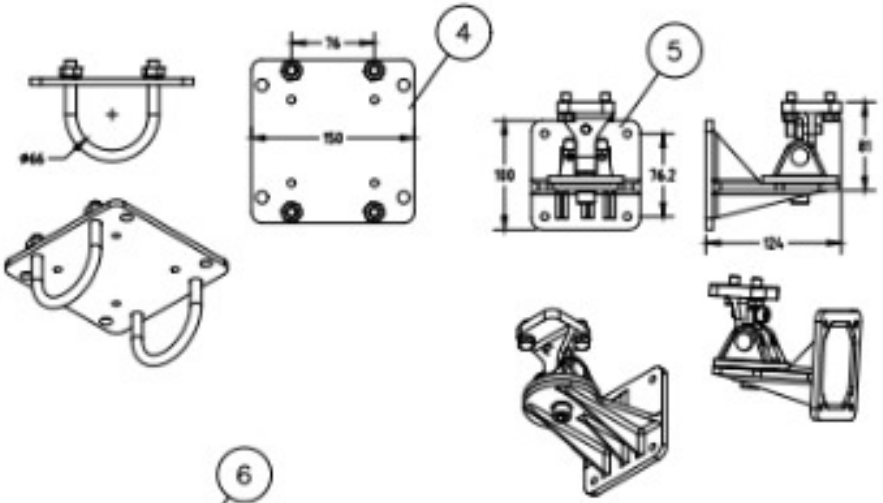
FLAME DETECTOR / 2" PIPE MOUNTING

ITEM	DESCRIPTIONS	NR
1	Flame Detector, FGD FlameSpec FLS-UV-IR-AS 11	1
2	Reducer M25 - M20 Ex d AISI 316	1
3	Stop Plug M25 Ex d AISI 316	1
4	2 inch Mounting Kit, FGD F107X0S50.00	1
5	Tilt Assy., FGD F110X0080.00	1
6	Weather Shield, FGD F107X0240.00	1
7	Stainless Steel Name Plate	
8		
9		
10		

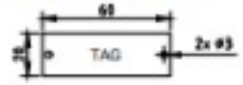
INSTALLATION QUANTITY

22



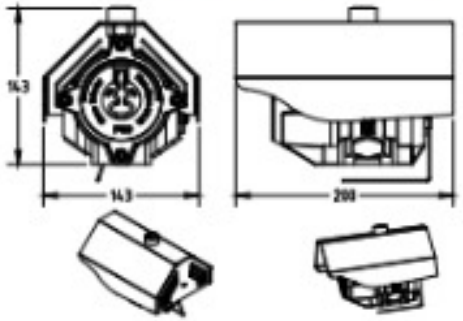


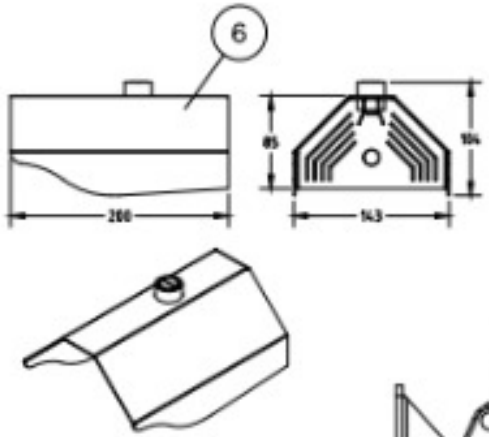
7 STAINLESS STEEL NAME PLATE DETAILS



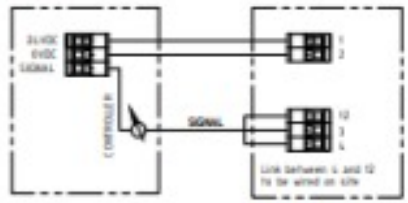
NOTE 5

GA WEATHER SHIELD AND DETECTOR

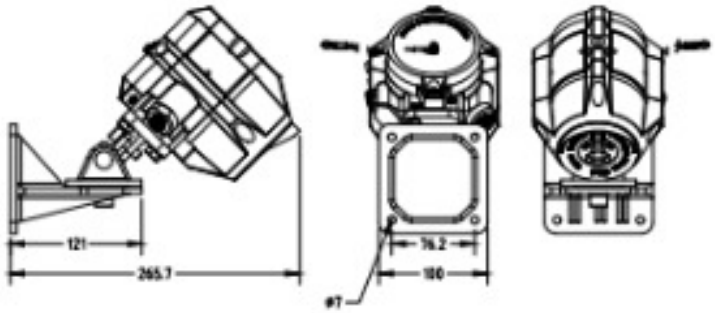




CONTROL CABINET DETECTOR



INSTALLATION SCHEME



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

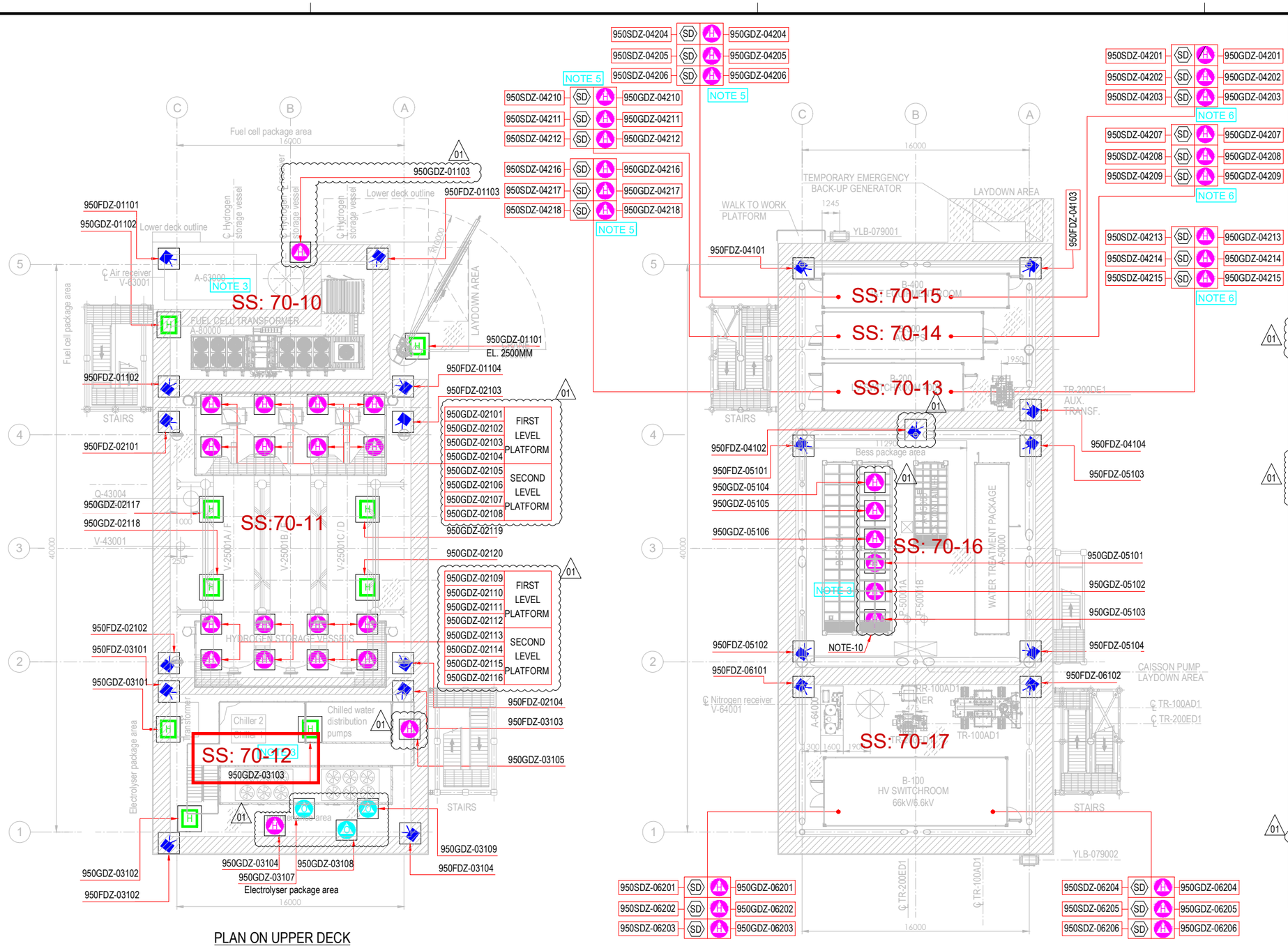
SHEET 013

REV. 02

Section 3 SYSTEM,SUB-SYSTEM LIMIT DRAWINGS

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 00



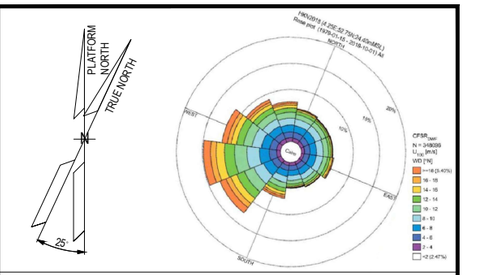
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.	
	UV-IR FLAME DETECTOR (FDZ)	22	01
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46	01
SD	SMOKE DETECTOR (SDZ)	24	
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3	
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9	01



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
01 5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS.
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
01 9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS

ELEVATION

FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
01 123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 10/07/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 01

File Name : 123A90-DDL-SAF-DL-30027 Rev.01

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: 70-12 & process: MC & discipline : Y

ATEX	70-12 F&G Devices FZ-03 (Electrolyser Area)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-FDZ-03101	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10001508	CJX01	100	2025-01-13	RFC 2
950-FDZ-03104	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10001511	CJX01	100	2024-12-11	RFC 2
950-GDZ-03102	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001536	CJX01	100	2025-01-14	RFC 2
950-GDZ-03107	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10001540	CJX01	100	2025-01-07	RFC 2
950-GDZ-03108	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10001541	CJX01	100	2025-01-07	RFC 2
950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10001542	CJX01	100	2025-01-10	RFC 2
950-MFA-03102	FZ-03 MFA Activation	ONSHORE	C10001546	CJX01	100	2024-12-11	RFC 2
950-MFA-03104	FZ-03 MFA Activation	ONSHORE	C10001548	CJX01	100	2024-12-12	RFC 2
950-XL-03103	FZ-03 Gas Beacon Activation	ONSHORE	C10001554	CJX01	100	2024-12-16	RFC 2
950-XL-03104	FZ-03 Fire Beacon Activation	ONSHORE	C10001555	CJX01	100	2024-12-16	RFC 2
950-XZ-03102	FZ-03 Sounder Activation	ONSHORE	C10001559	CJX01	100	2024-12-11	RFC 2

ITEM	Tag	950-FDZ-03101	: Flame Detector - FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10001508	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.**		606564			
Manufacturer	Fire and Gas DetectionTechnologies			**Model**		FlameSpec FLS-UV-IR-AS11			
Cert No.	ICQC 19 ATEX 0424X			**Equipment Ambient Temp.**		-55°C to +75°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	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	PL	
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	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	950-FDZ-03101	: Flame Detector - FZ-03 Electrolyzer PK Area			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001508		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		PL	
	Physical check	x	PL	
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	OK	
	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	950-FDZ-03101	: Flame Detector - FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001508	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

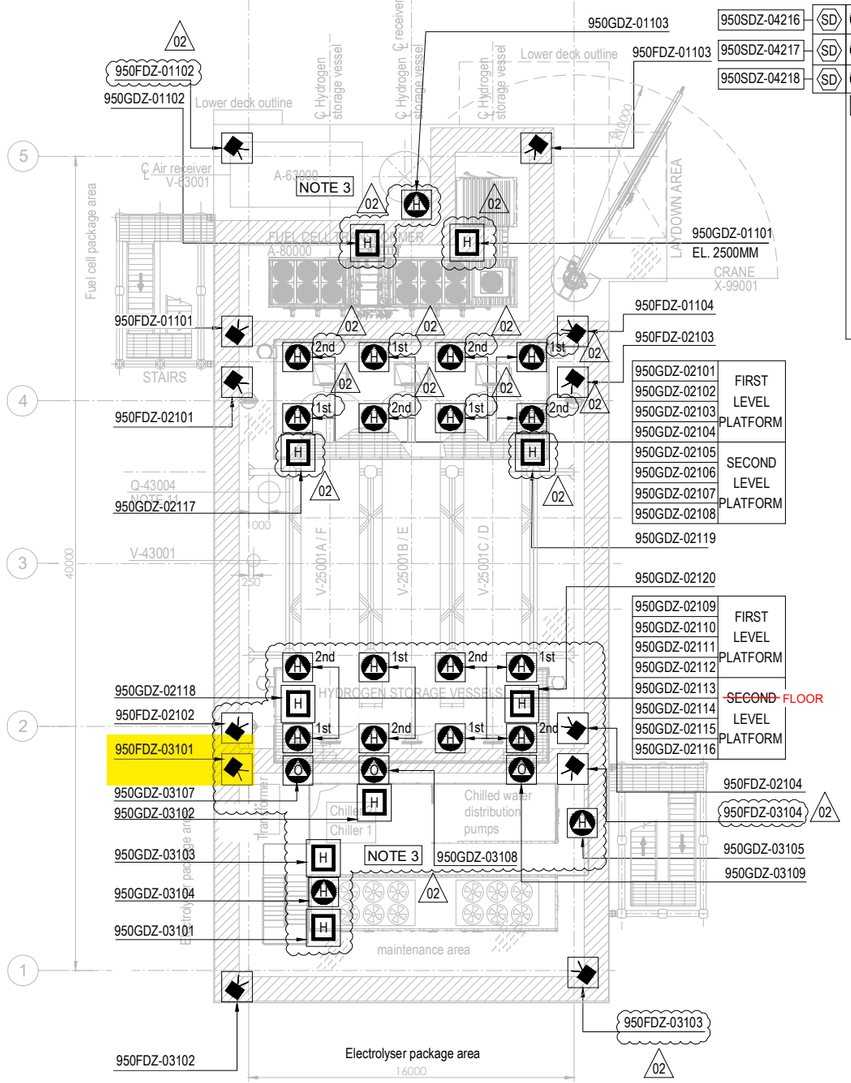
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

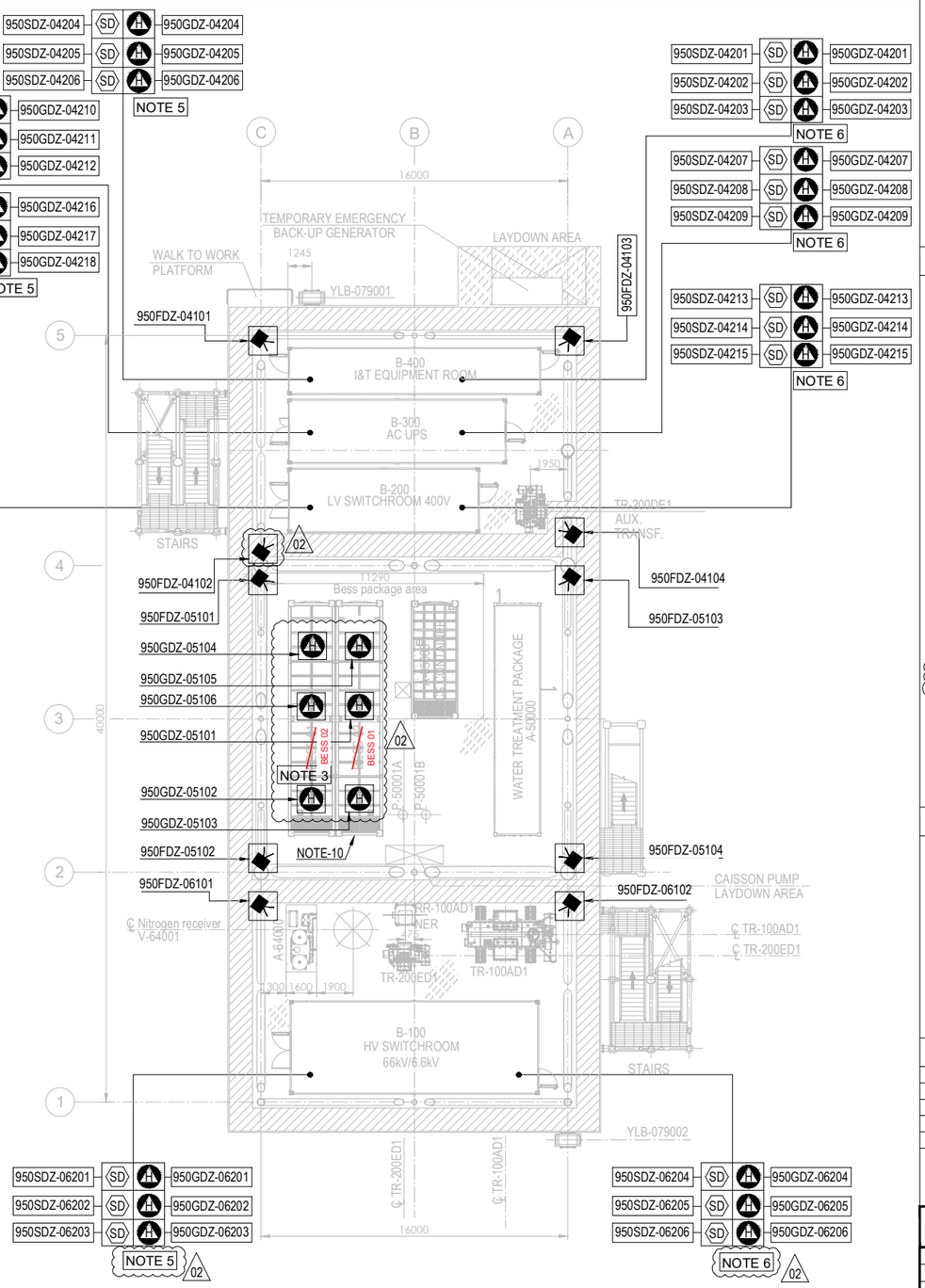
Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-10	2025-01-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-10T06:26:29.146Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-13T17:19:07.136Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

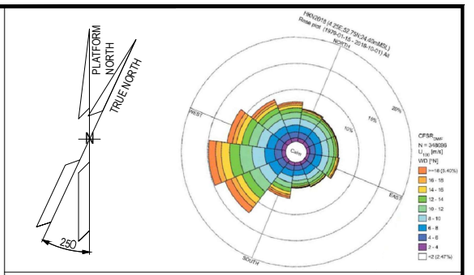


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

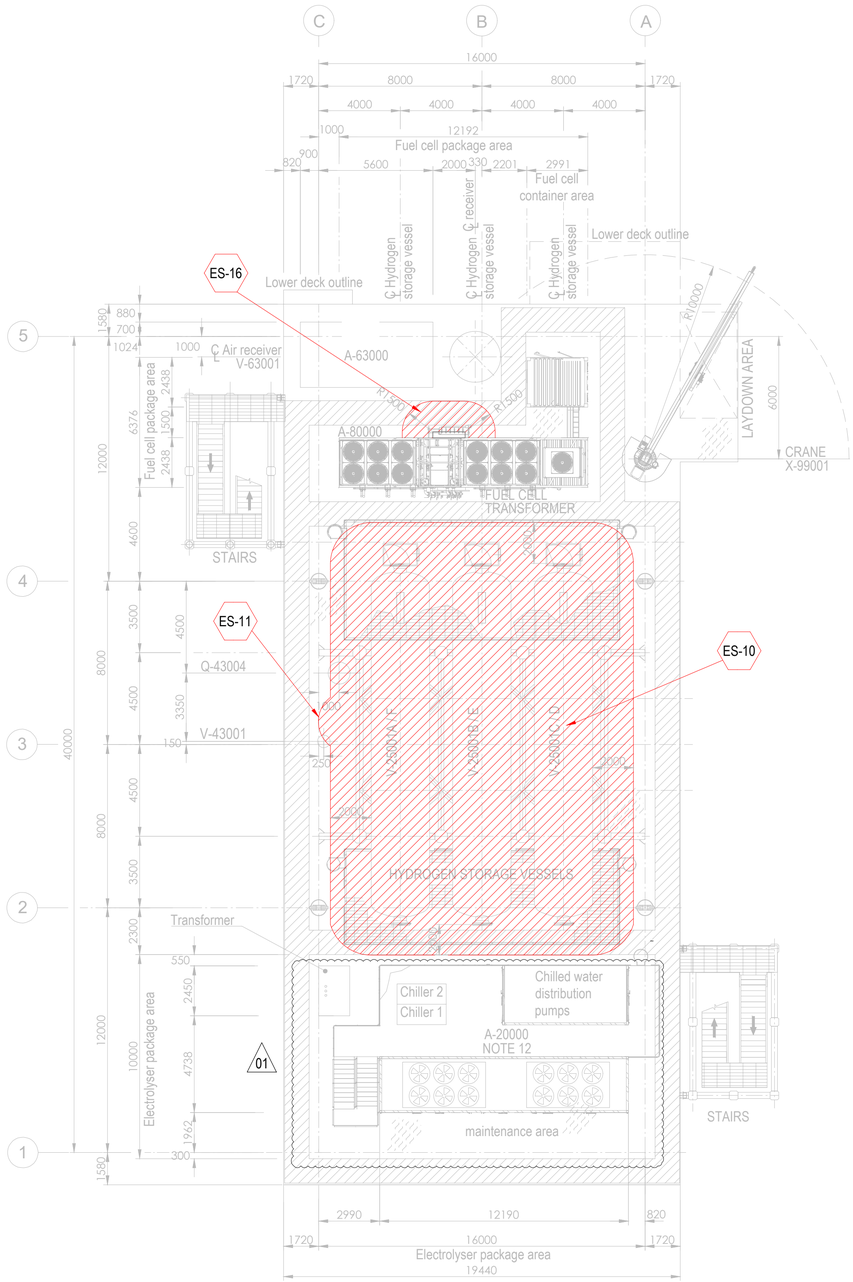
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

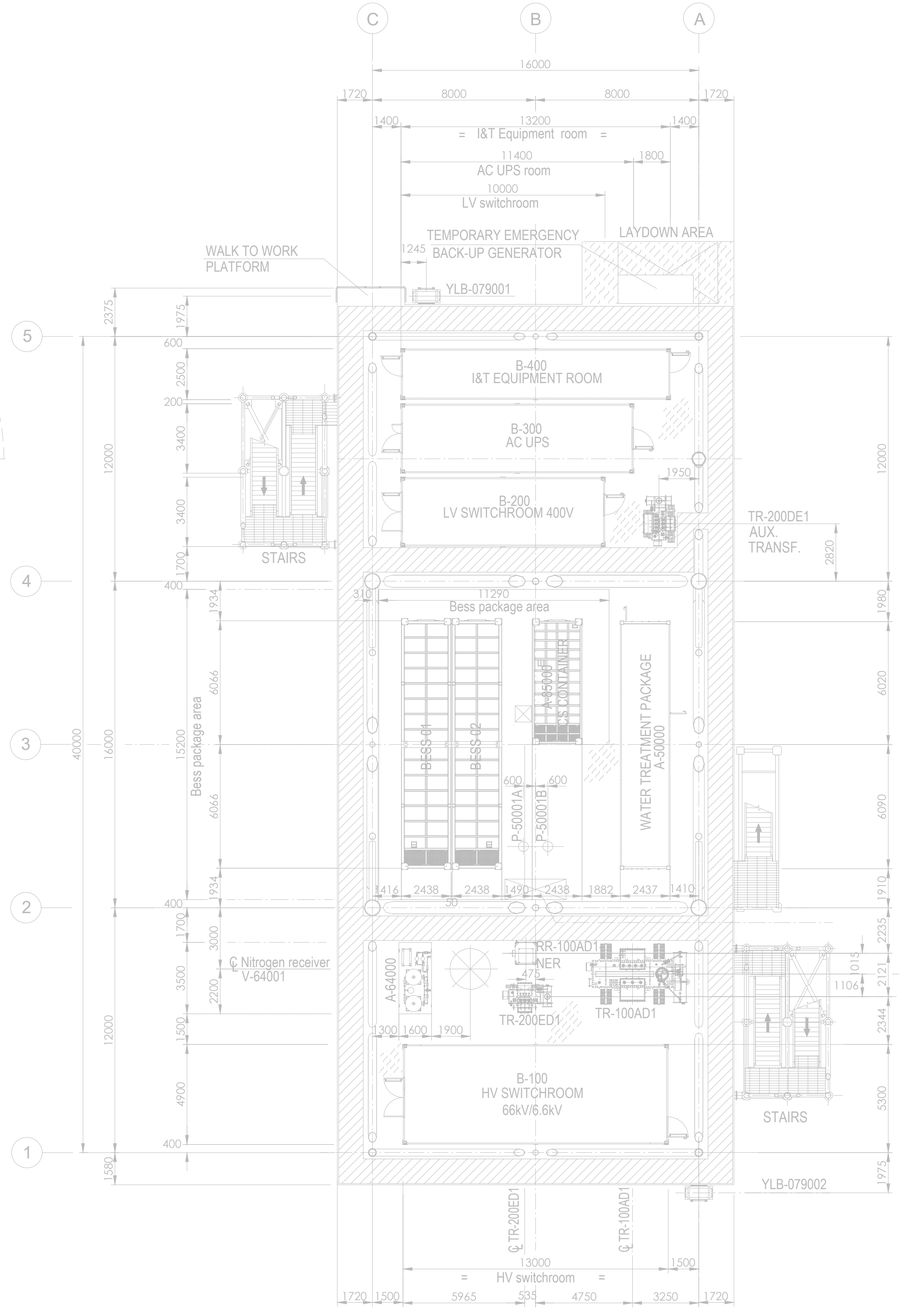
File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01



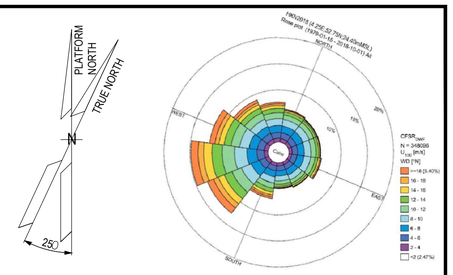
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

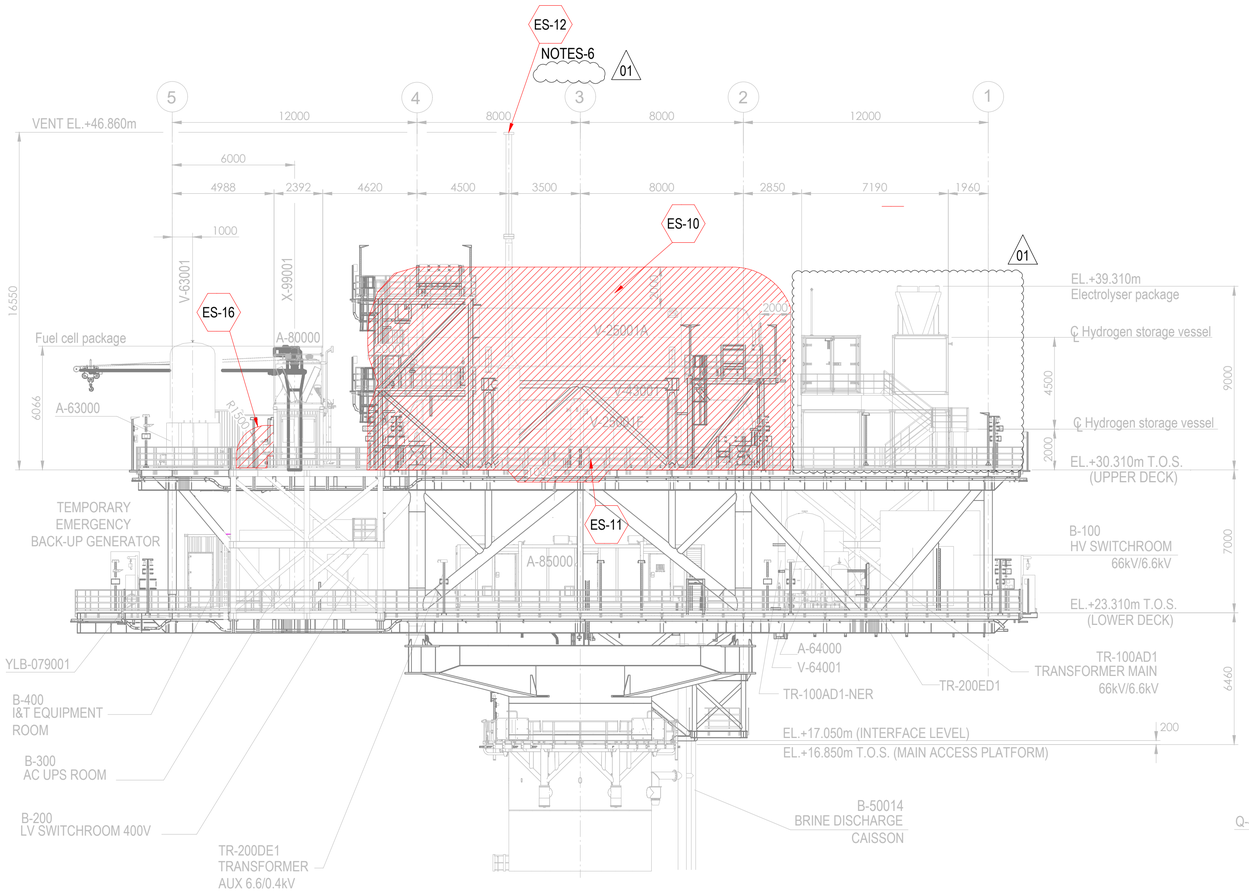
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

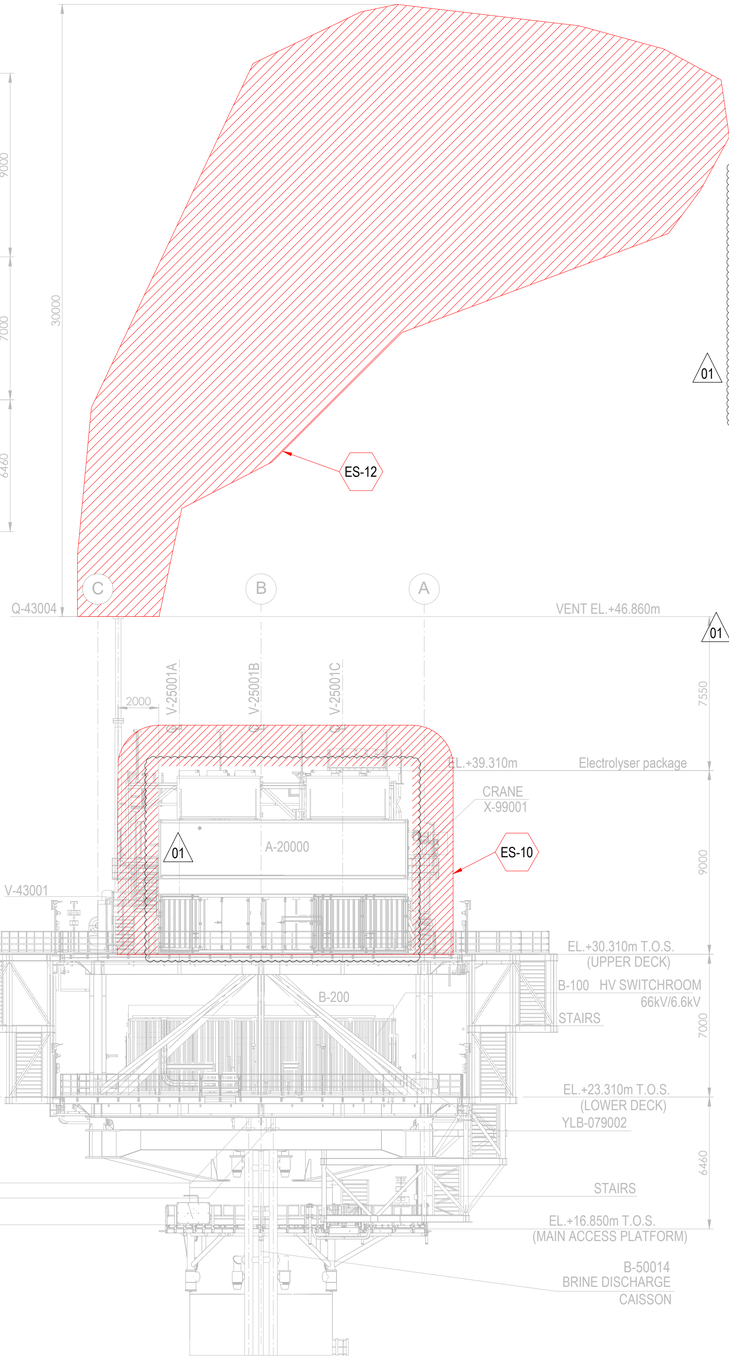
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



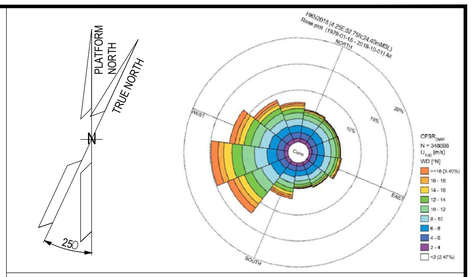
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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

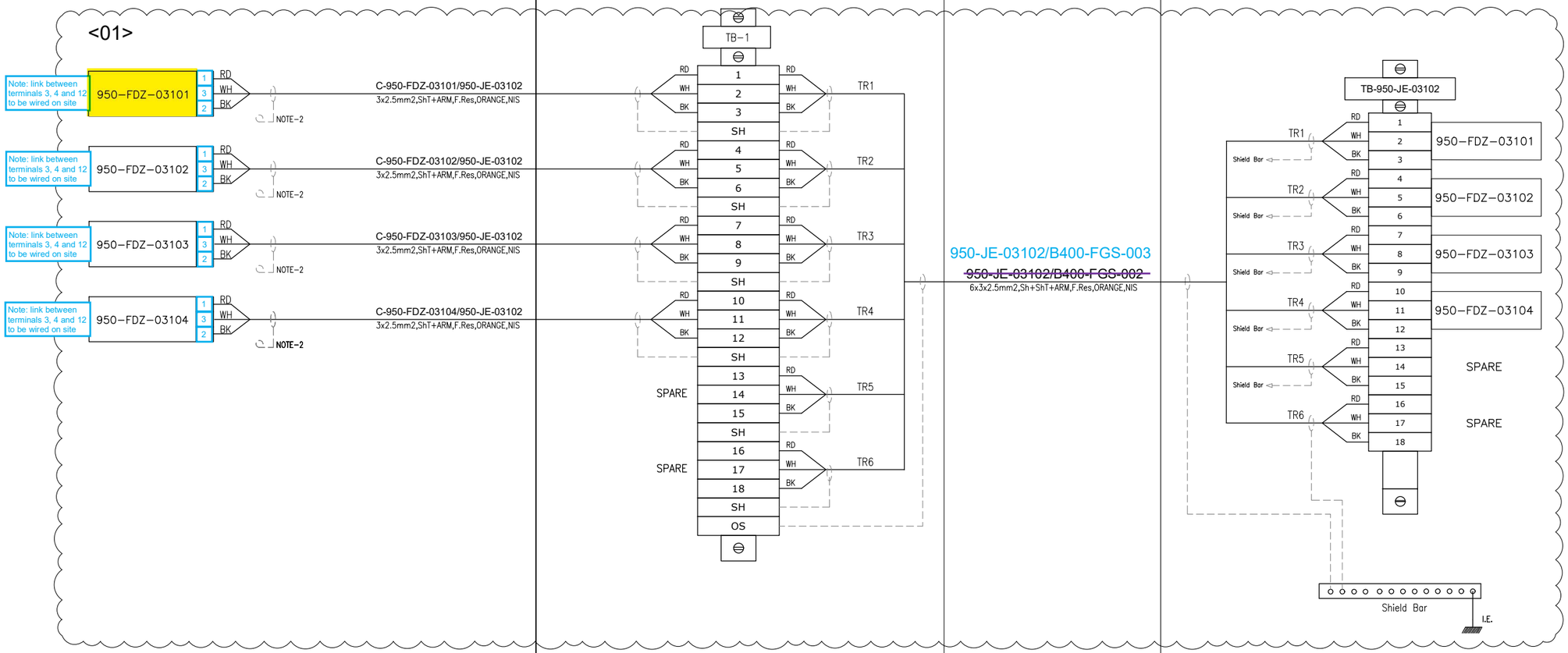
A1	DRAWING NO. 123A90-DDL-SAF-DL-30024	SHEET 001	REV. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03102	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003



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

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03102

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

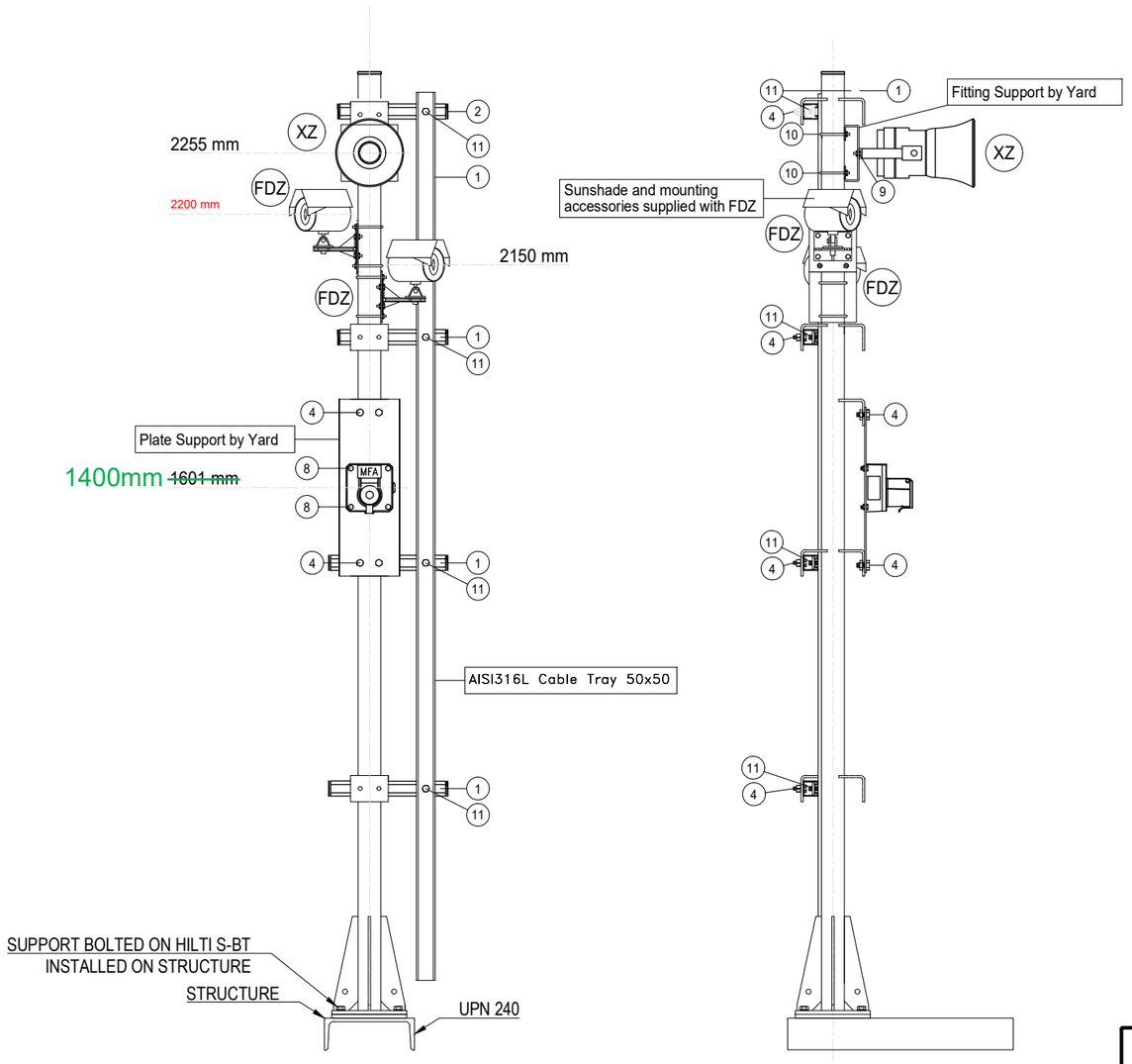
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 037	REV. 01

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

FGS-05

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	12
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
~~9~~	~~AISI 316L BOLT M6x35 + NUT M6 + WASHER M6~~	2
10	AISI 316L 2" U BOLT M8+ N.2 NUT M8 + N.2 WASHER M8	2
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	FDZ	FLAME DETECTOR	950-FDZ-01102
	FDZ	FLAME DETECTOR	~~950-FDZ-02101~~
	XZ	SOUNDER	950-XZ-01102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-01102
2	FDZ	FLAME DETECTOR	950-FDZ-02102
	FDZ	FLAME DETECTOR	950-FDZ-03101
	XZ	SOUNDER	950-XZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03102
3	FDZ	FLAME DETECTOR	950-FDZ-03103
	FDZ	FLAME DETECTOR	~~950-FDZ-02104~~ 950-FDZ-02102
	XZ	SOUNDER	950-XZ-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03101

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

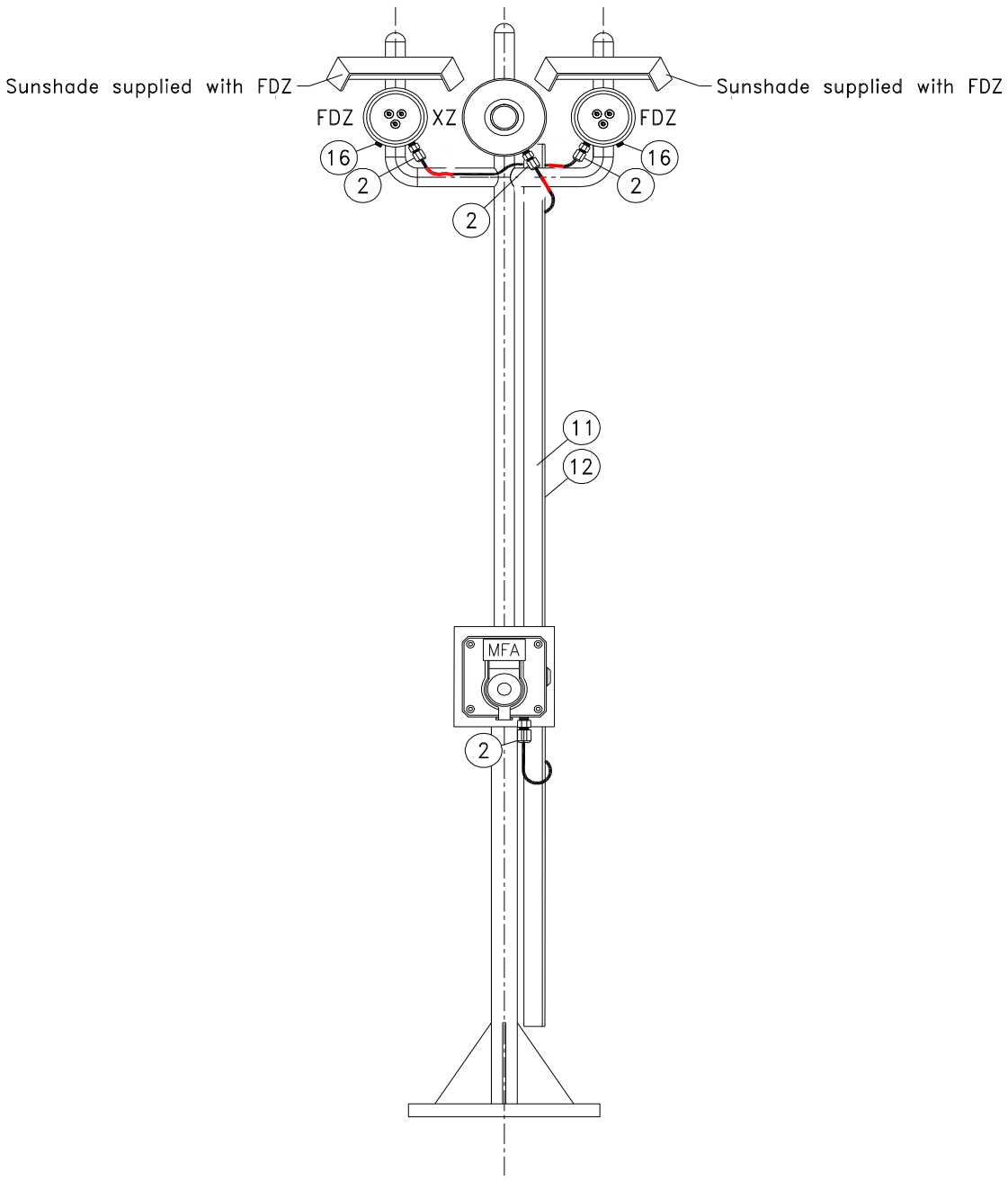
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 024	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-FDZ-01102
	950-XZ-01102
	~~950-FDZ-02101~~
	950-MFA-01102
2	950-FDZ-02102
	950-XZ-03102
	950-FDZ-03101
	950-MFA-03102
3	950-FDZ-03103
	950-XZ-03101
	950-FDZ-02104
	950-MFA-03101

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	2
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

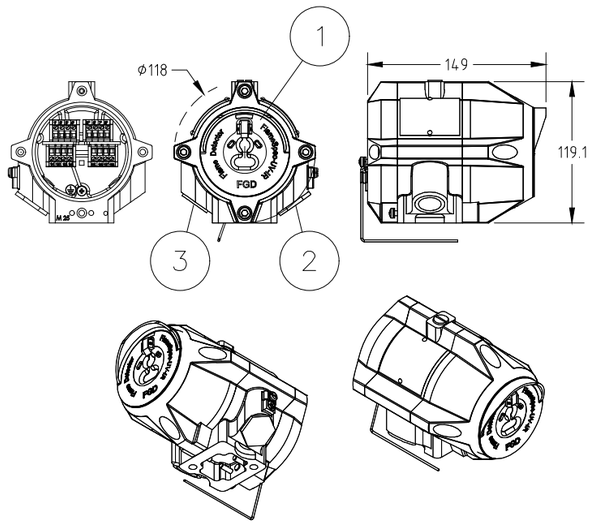
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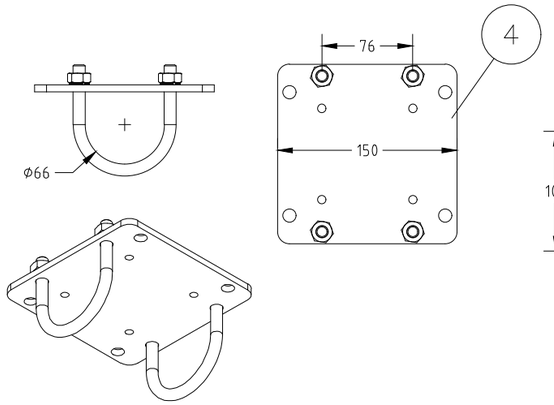
FLAME DETECTOR / 2" PIPE MOUNTING

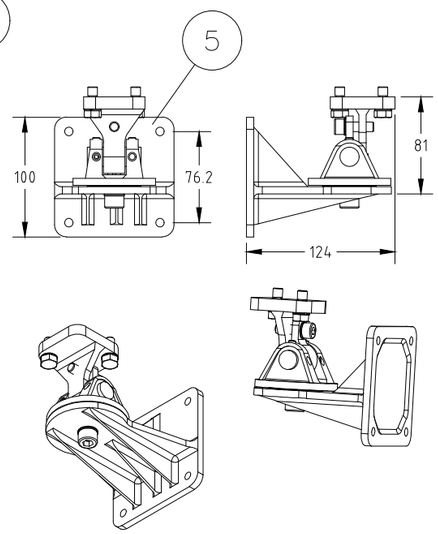
ITEM	DESCRIPTIONS	NR
1	Flame Detector, FGD FlameSpec FLS-UV-IR-AS11	1
2	Reducer M25 - M20 Ex d AISI 316	1
3	Stop Plug M25 Ex d AISI 316	1
4	2 inch Mounting Kit, FGD F107X0050.00	1
5	Tilt Assy, FGD F110X0090.00	1
6	Weather Shield, FGD F107X0240.00	1
7	Stainless Steel Name Plate	
8		
9		
10		

INSTALLATION QUANTITY

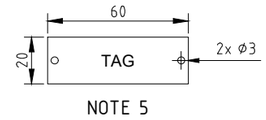
22





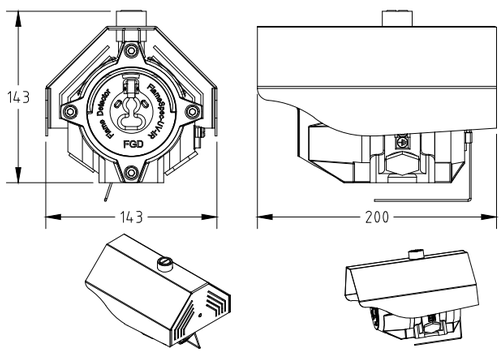


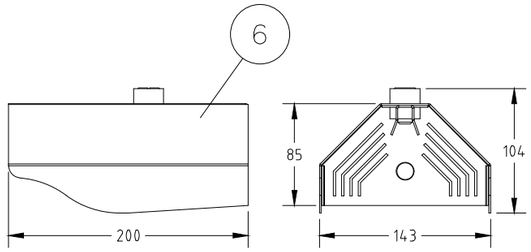
7 STAINLESS STEEL NAME PLATE DETAILS

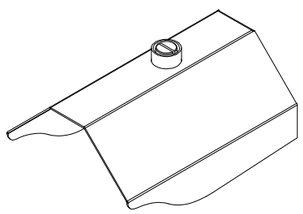


NOTE 5

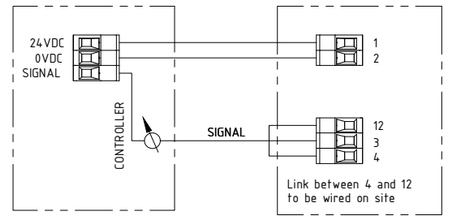
GA WEATHER SHIELD AND DETECTOR



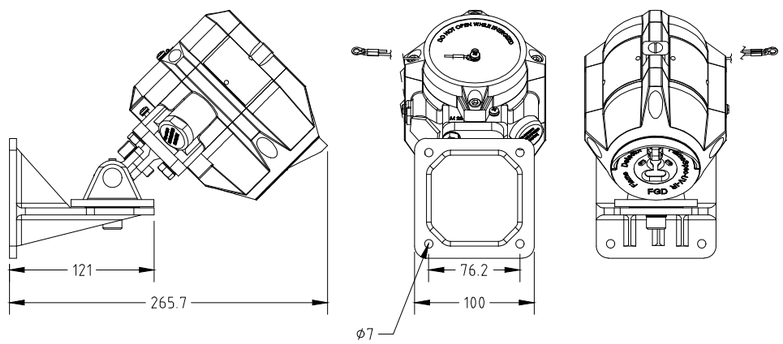




CONTROL CABINET — DETECTOR



INSTALLATION SCHEME



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 013

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FLAME DETECTOR / 2" PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-FDZ-01101
2	950-FDZ-01102
3	950-FDZ-01103
4	950-FDZ-01104
5	950-FDZ-02101
6	950-FDZ-02102
7	950-FDZ-02103
8	950-FDZ-02104
9	950-FDZ-03101
10	950-FDZ-03102
11	950-FDZ-03103
12	950-FDZ-03104
13	950-FDZ-04101
14	950-FDZ-04102
15	950-FDZ-04103
16	950-FDZ-04104
17	950-FDZ-05101
18	950-FDZ-05102
19	950-FDZ-05103
20	950-FDZ-05104
21	950-FDZ-06101
22	950-FDZ-06103

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING – TAG

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

A3	DRAWING NO.	SHEET	REV.
	1724000821-IN-DA-00003	014	02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FLAME DETECTOR

POS.	TAG NUMBER	SERVICE
1	950-FDZ-01101	FZ-01 FUEL CELL PK AREA
2	950-FDZ-01102	FZ-01 FUEL CELL PK AREA
3	950-FDZ-01103	FZ-01 FUEL CELL PK AREA
4	950-FDZ-01104	FZ-01 FUEL CELL PK AREA
5	950-FDZ-02101	FZ-02 H2 STORAGE VESSELS AREA
6	950-FDZ-02102	FZ-02 H2 STORAGE VESSELS AREA
7	950-FDZ-02103	FZ-02 H2 STORAGE VESSELS AREA
8	950-FDZ-02104	FZ-02 H2 STORAGE VESSELS AREA
9	950-FDZ-03101	FZ-03 ELECTROLYZER PK AREA
10	950-FDZ-03102	FZ-03 ELECTROLYZER PK AREA
11	950-FDZ-03103	FZ-03 ELECTROLYZER PK AREA
12	950-FDZ-03104	FZ-03 ELECTROLYZER PK AREA
13	950-FDZ-04101	FZ-04 B-400/B-300/B-200 AREA
14	950-FDZ-04102	FZ-04 B-400/B-300/B-200 AREA
15	950-FDZ-04103	FZ-04 B-400/B-300/B-200 AREA
16	950-FDZ-04104	FZ-04 B-400/B-300/B-200 AREA
17	950-FDZ-05101	FZ-05 BESS AREA
18	950-FDZ-05102	FZ-05 BESS AREA
19	950-FDZ-05103	FZ-05 BESS AREA
20	950-FDZ-05104	FZ-05 BESS AREA
21	950-FDZ-06101	FZ-06 B-100 AREA
22	950-FDZ-06103	FZ-06 B-100 AREA

File: 1724000821-IN-DS-00004-02.xlsx
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FlameSpec
UV-IR
UV-IR Flame Detector



The FlameSpec UV-IR will detect fires and explosions extremely quickly, thereby allowing mitigation steps to be initiated more rapidly to limit event escalation.

Introduction

The FlameSpec-UV-IR flame detector provides ultra-fast response, high performance and reliable detection of a large variety of fires including hydrocarbon fires (visible and non-visible), as well as hydrogen and methane/hydrogen mixed fires. The detector addresses slow growing fires as well as fast eruptions of fire using improved UV-IR technology. The detector operates in all weather and light conditions.

Key Benefits

- High immunity to false alarm
- High sensitivity – up to 100 ft. (30m) for a 1 ft^2 (0.1m^2) n-heptane pan fire.
- Hydrocarbon and non-hydrocarbon flame detection.
- Ultra-fast detection mode detection within 5 milliseconds for fireballs or explosions
- High speed (<0.5s) model [X5] available for compliance with NFPA 33.
- Four sensitivity levels.
- Universal outputs, 3 and 4 wire, 4-20 mA sink / source, Fire, Auxiliary and Fault Relays. RS485 port using Modbus RTU.
- Event logger – alarms, faults and other relevant events are logged to non-volatile memory
- Built-in-Test (BIT) – Automatic and manual self-test of window cleanliness and overall detector operation.
- Dirty optics warning for preventive maintenance needs.
- HART® 7, for configuration & maintenance - option available.
- Window heater to avoid condensation and icing.
- Stainless steel tilt mount with horizontal and vertical adjustment.
- Functional safety - SIL 2 capable - option available.
- Detect high UV (sparks and arcs) or IR levels via auxiliary relay and 4-20mA.

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave. Anaheim, CA 92807 USA
Tel: (+1) 714-671-8500 | support@fg-detection.com
Version: F110V0010.08 • May 2023

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Response Characteristics

Fuel	Size	Sensitivity	Distance ft. (m)	Avrg Resp.Time (s)
N-Heptane	1 x 1 ft.	Extreme	98 (30)	2.0
N-Heptane	1 x 1 ft.	High	75 (23)	1.7
N-Heptane	1 x 1 ft.	Medium	49 (15)	1.0
N-Heptane	1 x 1 ft.	Low	16 (5)	1.0
Gasoline	2 x 2 ft.	Extreme	197 (60)	3.3
Gasoline	1 x 1 ft.	Extreme	98 (30)	1.8
Gasoline	1 x 1 ft.	Medium	49 (15)	1.3
Methane	32-in Plume	Extreme	59 (18)	1.4
Methane	32-in Plume	Medium	30 (9)	0.9
LPG	32-in Plume	Extreme	75 (23)	1.2
LPG	32-in Plume	High	56 (17)	1.6
LPG	32-in Plume	Medium	33 (10)	1.2
LPG	32-in Plume	Low	13 (4)	1.2
Diesel	1 x 1 ft.	Extreme	75 (23)	2.6
Diesel	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Extreme	75 (23)	3.3
JP5	1 x 1 ft.	High	56 (17)	1.8
JP5	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Low	16 (5)	1.2
Kerosene	1 x 1 ft.	Extreme	75 (23)	1.8
Kerosene	1 x 1 ft.	Medium	36 (11)	0.9
Methanol	1 x 1 ft.	Extreme	52 (16)	0.8
Methanol	1 x 1 ft.	High	43 (13)	3.2
Methanol	1 x 1 ft.	Medium	30 (9)	1.3
Methanol	1 x 1 ft.	Low	10 (3)	2.7
Ethanol	1 x 1 ft.	Extreme	62 (19)	4.1
Ethanol	1 x 1 ft.	Medium	31 (9.5)	2.9
Isopropanol	1 x 1 ft.	Extreme	75 (23)	2.2
Isopropanol	1 x 1 ft.	Medium	36 (11)	0.8
Polypropylene	1 x 1 ft.	Extreme	49 (15)	1.4
Polypropylene	1 x 1 ft.	Medium	23 (7)	0.9
Hydrogen	32-in Plume	Extreme	66 (20)	6.4
Hydrogen	32-in Plume	Medium	33 (10)	1.0
Syngas (30%CH_4:70%H_2)	32-in Plume	Extreme	59 (18)	3.2
Syngas (30%CH_4:70%H_2)	32-in Plume	Medium	33 (10)	1.2

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Immunity to False Alarm

False Alarm Source	Modulated		Unmodulated	
	Distance ft. (m)	Response	Distance ft. (m)	Response
Sunlight, Direct, Reflected		No Alarm		No Alarm
Incandescent frosted glass light, 300W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Fluorescent, 70W (3x23.3W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric arc	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Arc welding	10.0 (3.0)	No Alarm	10.0 (3.0)	No Alarm
Radiation heater, 2000W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Halogen lamp (500W) non-shielded	7.0 (2.0)	No Alarm	7.0 (2.0)	No Alarm
Halogen lamp (1000W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Mercury vapor lamp 160Wx3	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Exhausts	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Projector led	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Solenoid bell	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
soldering iron	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric Drill	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

FIRE DETECTION	**Detection time and distance**	5ms for fast burst of explosion 1s for 1 ft² (0.1m²) n-heptane pan fire at 0–50 ft. (0–15m) < 2s for 1 ft² (0.1m²) n-heptane pan fire at 50–100 ft. (15–30m)
	Sensitivity Range	4 sensitivity ranges: Extreme, High, Medium, Low
	Field of view (IR detection)	90° Horizontal, 80° Vertical
	Time Delay	0-30 seconds
	Built in Test	Automatic and Manual
ELECTRICAL SPECIFICATIONS	**Operating Voltage**	24 VDC nominal (18-32 VDC)
	Current Consumption	Standby: 120mA 180mA all systems in operation (including window heater)
	Electrical Entries	2x cable and conduit entries 3/4" NPT(F) or M25x1.5
	Wiring	14-17 AWG (2.5–1.0 mm²)
OUTPUTS	**Relays**	SPST volt-free contacts rated 2A at 30 VDC 3 relays: Alarm & Auxiliary – normally open; Fault – normally closed
	0-20mA (stepped) current output	3 wire and 4 wire (isolated) configurations (sink and source) HART® rev 7.0 (option available)
	Indication	Tri-color LED (Green, Yellow, Red)
	Modbus	RTU compatible on RS-485
MECHANICAL SPECIFICATIONS	**Size**	5.51 x 3.54 × 3.54" (140×90×90mm)
	Weight	Detector (Stainless Steel 316): 6.6 lbs. (3.0 kg) Tilt mount (Stainless Steel 316): 3.3 lbs. (1.5 kg)
ENVIRONMENTAL SPECIFICATIONS	**Temperature Range**	Operating: -67°F to +185°F (-55°C to +85°C) Storage: -67°F to +185°F (-55°C to +85°C)
	Humidity	Up to 99% (RH), non-condensing
	Ingress Protection	IP66 & 68 (2m, 24hr); NEMA 4X & 6P
APPROVALS	**ATEX**	ATEX: II 2 G D Ex db IIC T5 Gb or Ex db eb IIC T5 Gb and Ex tb IIIC T95°C Db -55°C<Ta<75°C Ex db IIC T4 Gb or Ex db eb IIC T4 Gb and Ex tb IIIC T105°C Db -55°C<Ta<85°C
	IECEx, INMETRO & PESO	Ex db IIC T5 Gb -50°C≤Ta≤75°C Ex db IIC T4 Gb -50°C≤Ta≤85°C
	FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 Class I, Zone 1, AEx/Ex db IIC T4 Gb T4 -50°C≤Ta≤85°C T5 -50°C≤Ta≤75°C
	EAC CU TR	1Ex d IIC T5 Gb or 1Ex de IIC T5 Gb and Ex tb IIIC T95°C Db -55°C≤Ta≤75°C 1Ex d IIC T4 Gb or 1Ex de IIC T4 Gb and Ex tb IIIC T105°C Db -55°C≤Ta≤85°C
	Performance	ANSI FM 3260 EN 54-10
	Functional safety	Certified SIL2 capable, per IEC 61508:2010 High & Low demand (option available)

ACCESSORIES	**Tilt mount, model FLS-TMO-S01**	**High vibration mounting bracket, model FLS-MIL-S01**
	Weather cover, model FLS-WCO-S01	**Flame simulator, model FLS-FSIM-UV-IR-KIT**
	2" & 3" pole mount adapter, model FLS-PMA-S23	**Airshield, model FLS-ASD-S01**
	Duct mount with window, model FLS-DMW-S01	**Duct mount for airshield, model FLS-DMX-S01**
WARRANTY	**5 years**	

FIRE & GAS DETECTION TECHNOLOGIES INC.

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave. Anaheim, CA 92807 USA
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Specifications subject to change without notice.

FlameSpec

FLS-FSIM

Flame Simulator Family



The FlameSpec Flame Simulator range provides fast and convenient detector verification in the field.

Introduction

Flame simulators are often used by industry to perform detector testing during commissioning and periodic system testing. FlameSpec simulators differ from many competing products because they test the active sensors and detection algorithms of the devices without using “bypass” techniques to trick the detector into responding.

The FSIM range is lightweight, simple to use and has a modern ergonomic design. Suitable for use in hazardous areas, the FSIM-IR3 has an extended trigger distance of up to 30 feet (10 meters) from the detector.

Three FSIM models are available, depending on the FlameSpec Detector to be tested, IR3, IR3-H2 and UV-IR.

Key Benefits

- Tests the active sensors and detection algorithms, without using “bypass” techniques.
  - No tricks, detector performance assured.
- Works from distance up to 30 feet (10 meters).
  - Reduces the need for scaffolding.
- Hazardous area use approved.
  - Hot work permits not needed required.
- Lightweight and simple to use.
  - More than 1,000 activations between charges.
- Includes carrying strap, protective storage case, battery charger and operating instructions.
- Easy to transport & supplied with everything needed.
- Complementary to FlameSpec Detector inbuilt test features.
  - Enables full end to end (loop) system test.

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Version: F300V0010.04 • Oct 2023

FlameSpec-FLS-FSIM

Flame Simulator Family

	Simulator Kits Part Nos	FLS-FSIM-IR3-KIT	FLS-FSIM-IR3-H2-KIT	FLS-FSIM-UV-IR-KIT
	Detector type	FLS-IR3[1] FLS-IR3-HD[1]	FLS-IR3-H2 FLS-IR3-H2-HD	FLS-UV-IR FLS-UV-IR-HD
OPERATION DISTANCES	**Detector Sensitivity**	ft. m	ft. m	ft. m
	Extreme	30 9.0	30 9.0	42.5 13.0
	High	20 6.0	20 6.0	26 8.0
	Medium	10 3.0	10 3.0	20 6.0
	Low	3.3[2] 1.0[2]	3.3[2] 1.0[2]	6.6 2.0
ELECTRICAL SPECIFICATIONS	**Operating Voltage nominal, V**	3.7	3.7	3.7
	Number of activations between charging	~1000	~1000	~50
	Battery Capacity, mAh	>3000	>3000	>3000
	Charging time, hours	up to 3	up to 3	up to 3
	Indication	3 Color LED (Green, Yellow, Red)		
	All Simulator Models			
MECHANICAL SPECIFICATIONS	**Size**	3.9 x 3.9 x 7.8" (100 x 100 x 200mm)		
	Weight	3.96 lbs. (1.8 kg)		
	Simulator Enclosure Material	Painted Aluminum LM25		
ENVIRONMENTAL SPECIFICATIONS	**Ingress Protection**	IP65 (NEMA 4X)		
	Humidity	up to 99% (RH), non-condensing		
	Operating temperature	Min: −4°F (−20°C) Max: +122°F (+50°C)		
APPROVALS	**Explosion proof**	ATEX Ex II 2 G Ex db ib op is IIC T6 Gb Ex II 2 D Ex tb ib op is IIIC T85°C Db -20°C<Ta<+50°C		
ACCESSORIES included in kits	**Carrying Case**	FLS-FSIM-CASE		
	Carrying Strap	FLS-FSIM-STRAP		
	Cover Tool	FLS-FSIM-TOOL		
	Allen Key	FLS-FSIM-ALLEN		
	Battery Charger	FLS-FSIM-CHRGR		
WARRANTY	**3 Years**			

[1]not CO2L variant
[2]with collimator removed

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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
77-HS-009A	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11407	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-009B	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11408	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-010A	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11409	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-010B	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11410	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-011A	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11411	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-011B	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11412	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-012A	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11413	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-012B	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11414	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-013A	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11415	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-013B	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11416	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-014A	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11417	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-014B	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11418	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-015A	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11419	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-015B	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11420	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-016A	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11421	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
77-HS-016B	Hand Switch	LOWER DECK	1724000821	Fores	EATON	24-11422	GHG 432	II 2 G	BVS 22 ATEX E032 X	1724000821-COM-LIS-00011	II 2 G Ex ed ib m IIC T6	-	N/A	True	N/A	True	
80-PSV-001	Hyrogen storage to A-80000 Package discharge	LOWER DECK	1724000518	Technical Srl	Technical Srl	291496	320-K10-5L	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_3 HAZARDOUS-AREA_2 HAZARDOUS-AREA_5 HAZARDOUS-AREA_6
80-PT-002	Hyrogen storage to A-80000 Package	LOWER DECK	1724000979	Terranova Srl	Terranova Srl	SE240657	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	HAZARDOUS-AREA_6
80-XV-001	Hyrogen storage to A-80000 Package 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
80-XY-001	Hyrogen storage to A-80000 Package 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
80-ZSH-001	Hyrogen storage to A-80000 Package 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
80-ZSL-001	Hyrogen storage to A-80000 Package 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
950-ASD-01101	FZ-01 abandon shutdown (ASD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/1	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ASD-03101	FZ-03 abandon shutdown (ASD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/2	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ASD-04101	FZ-04 abandon shutdown (ASD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/3	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ASD-06101	FZ-06 abandon shutdown (ASD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/4	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ASD-07101	FZ-07 abandon shutdown (ASD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/5	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESD-01101	FZ-01 emergency shut down (ESD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/11	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESD-03101	FZ-03 emergency shut down (ESD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/12	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESD-04101	FZ-04 emergency shut down (ESD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/13	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESD-06101	FZ-06 emergency shut down (ESD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/14	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESD-07101	FZ-07 emergency shut down (ESD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/15	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESDD-01101	FZ-01 depress. emergency shut down (ESDD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/16	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESDD-03101	FZ-03 depress. emergency shut down (ESDD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/17	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESDD-04101	FZ-04 depress. emergency shut down (ESDD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/18	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESDD-06101	FZ-06 depress. emergency shut down (ESDD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/19	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-ESDD-07101	FZ-07 depress. emergency shut down (ESDD)	LOWER DECK	1724000821	Fores	Medc	225420465/30/20	SM87PBL	II 2 G	Baseefa 03 ATEX 0075 X	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-01101	FZ-01 Flame detect. in fuel cell package area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-01102	FZ-01 Flame detect. in fuel cell package area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-01103	FZ-01 Flame detect. in fuel cell package area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-01104	FZ-01 Flame detect. in fuel cell package area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-02101	FZ-02 Flame detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-02102	FZ-02 Flame detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-02103	FZ-02 Flame detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-02104	FZ-02 Flame detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-03101	FZ-03 Flame detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-03102	FZ-03 Flame detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-FDZ-03103	FZ-03 Flame detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Fire and Gas Detection Technologies	Note1	FlameSpec FLS-UV-IR-AS11	II 2 G	ICQC 19 ATEX 0424X (SENSOR) TPS19 ATEX 105708 0001X (PLUG) INERIS 14 ATEX 0029X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres Directive 94/9/EC**

(1) # EC-TYPE EXAMINATION CERTIFICATE

(3) Number of the EC type examination certificate: **INERIS 14ATEX0029X**

(4) Equipment or protective system:

FITTING UNITS TYPE RE**** or RE******* or PL**** or NP*** or EM*** or ELF***

(5) Manufacturer: **RIBCO**

(6) Address: Via dei Mille, 12
20061 Carugate (MI)-ITALY

(7) This equipment or protective system and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

(8) INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC of the 23rd March 1994, and accredited by COFRAC under number 5-0045 for certification of products and services (scope of accreditation available on the website www.cofrac.fr) certifies that this equipment or protective system fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, described in annex II of the Directive.

The examinations and the tests are consigned in report No 028198/14.

(9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 60079-0	:	2012/A11	:2013
EN 60079-1	:	2007	
EN 60079-7	:	2007	
EN 60079-31	:	2009	

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

Parc Technologique Alata BP 2 F-60550 Verneuil-en-Halatte
tél + 33(0)3 44 55 66 77 **fax** + 33(0)3 44 55 66 99 **internet** www.ineris.fr

Institut national de l'environnement industriel et des risques
Etablissement public à caractère industriel et commercial - RCS Senlis B 381 984 921 - Siret 381 984 921 00019 - APE 7120B

(10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protective system is subjected to the special conditions for safe use, mentioned in the annex of this certificate.

(11) This EC type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system, these are not covered by this certificate.

(12) The marking of the equipment or the protective system will have to contain:

Ex I M2 Ex II 2 GD

Verneuil-en-Halatte, 2014.06.26

ATMOSPHERES EXPLOSIVES ORGANISME NOTIFIE INERIS NOTIFIED BODY EXPLOSIVE ATMOSPHERES

The Chief Executive Officer of INERIS
By delegation
T. HOUEIX
Ex Certification Officer

(13) # ANNEX

(14) EC TYPE EXAMINATION CERTIFICATE N°INERIS 14ATEX0029X

(15) DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM

This series of fitting units is composed by adapters, plugs, nipples and 90°bends can be made in EN AW-6060, CW614N (OT58), AISI 316L or ASTM A105.

It gets the degree of protection IP66 according to the EN 60529 standard.

PARAMETERS RELATING TO THE SAFETY

Size of threaded joints:

Taper threading	:	NPT	:	3/8" NPT up to 3" NPT.
Cylindrical threading	:	ISO-262 and ISO965-1/2/3	:	M16 x 1.5 mm up to M90 x 1.5 mm.

Operating temperature:

-40°C to +100°C with EPDM O-ring;

-60°C to +180°C with silicone O-ring.

MARKING

Marking has to be readable and indelible; it has to include the following indications:

a) Marking for units without aluminum

RIBCO
20061 Carugate (MI)-ITALY
RE****** or RE******* or PL**** or NP*** or EM*** or ELF***
INERIS 14ATEX0029X
(Year of construction)
Ⓔx I M2 Ⓔx II 2 GD
Ex d I Mb
Ex d IIC Gb
Ex e IIC Gb
Ex tb IIIC Db IP66

On the small equipments, the marking can be reduced:

RIBCO-I
RE****** or RE******* or PL**** or NP*** or EM*** or ELF***
(Year of construction)
INERIS 14ATEX0029X
Ⓔx I M2 Ⓔx II 2 GD
Ex d/e/tb
IP66

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

b) Marking for units in aluminum

RIBCO
20061 Carugate (MI)-ITALY
RE****** or RE******* or PL**** or NP*** or EM*** or ELF***
INERIS 14ATEX0029X
(Year of construction)
Ⓔx II 2 GD
Ex d IIC Gb
Ex e IIC Gb
Ex tb IIIC Db IP66

On the small equipments, the marking can be reduced:

RIBCO-I
RE****** or RE******* or PL**** or NP*** or EM*** or ELF***
(Year of construction)
INERIS 14ATEX0029X
Ⓔx II 2 GD
Ex d/e/tb
IP66

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitutes the technical documentation of the equipment, subject of this certificate.

- Certification File DC-FIT-00 Rev.0 (12 items) signed on 2014.03.10

(17) SPECIAL CONDITIONS FOR SAFE USE

Operating temperature of the fitting units:

-40°C to +100°C with EPDM O-ring;

-60°C to +180°C with silicone O-ring.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is ensured by:

- Conformity to the standards quoted in clause (9).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

TÜV SÜD ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

(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:

TPS 19 ATEX 105708 0001 X Rev. 00

(4) Equipment or Protective System: Stopping plugs - Type: BHL M25, BHL 3/4NPT

(5) Manufacturer: Shenzhen Zhongli Hardware Products Co., Ltd.

(6) Address: Building 1, Hehe Science and technology Park, Daxing Community, Fucheng Street, Longhua District, 518109 Shenzhen, PEOPLE'S REPUBLIC OF CHINA

(7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) TÜV SÜD Product Service GmbH, Notified Body no. 0123, 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 the confidential reports with no. 64.105.19.01091.01

(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 60079-7:2015+A1:2018	**EN 60079-31:2014**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe 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 2GD Ex db IIC Gb Ex eb IIC Gb
Ex tb IIIC Db

Certification Body, München, 13.01.2020

Ing. Kristof De Gersem, MSc.

Certificates without signature shall not be valid. The Certificates may only be circulated in full including its schedule(s). Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail. The document is administrated under the following number: EX5A 105708 0001 Rev. 00

Doc. Name: Temp-ExNBG-TPS-EU-Type-Cert-Rev. 04

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 München • Germany

A4 / 07.17

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT
TÜV SÜD

(13) **Schedule**

(14) **EU-Type Examination Certificate no.**

TPS 19 ATEX 105708 0001 X Rev. 00

Product Service

Certificate History

Revision:	Description:	Report no.:	Issue Date:
Rev. 00	First issue of certificate.	64.105.19.01091.01	13.01.2020

(15) Description of equipment:

The stopping plugs comprise a cylindrical body with an external male thread along its length. BHL M25 has M thread and BHL 3/4NPT has NPT thread. The body material of them are SUS316L. BHL M25 with an "O" ring seal but BHL 3/4NPT without.

The stopping plugs are designed for use in explosive atmospheres classified as Gas Zone 1 and Zone 2 and as Dust Zone 21 and Zone 22.

The M and NPT thread forms are in explosion protection type "d", "e" and "t".

See the instruction manual for further details.

Model designation:

BHL M25, BHL 3/4NPT

Model difference:

Type	Metric	NPT
BHL M25	M25	-
BHL 3/4NPT	-	¾ NPT

Technical data:

Service temperature (Ts)	-60°C≤Ts≤180°C
Degree of protection by enclosure	IP64*, IP66**, IP68**

* IP64 is tested according to EN/IEC 60079-0.
** IPX6 and IPX8 are tested according to EN/IEC 60529; IPX8: 1m, 24h.

Warning label:

N/A

Installation instruction:

See installation instructions provided by the manufacturer and part of this certification.

Certificates without signature shall not be valid. The Certificates may only be circulated in full including its schedule(s). Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail. The document is administrated under the following number: EX5A 105708 0001 Rev. 00

Doc. Name: Temp-ExNBG-TPS-EU-Type-Cert-Rev. 04

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 München • Germany

A4 / 07.17

TÜV®

(13) **Schedule**

(14) **EU-Type Examination Certificate no.**

TPS 19 ATEX 105708 0001 X Rev. 00

Product Service

See also (17) Special conditions for safe use.

(16) Test report(s): 64.105.19.01091.01

Routine tests:

N/A

Document List:

File no.:	Description:	Pages:	Rev:	Date:
20191006M-01	BHL M25 drawing	1	A/0	2019-11-25
20191006F-01	BHL 3/4NPT drawing	1	A/0	2019-11-25
BC0601A	BHL M25 Instruction manual	1	00	2019-11-25
BC0601B	BHL 3/4NPT Instruction manual	1	00	2019-11-25

A copy of the full documentation is kept confidentially at TÜV SÜD.

(17) Special conditions for safe use:

1. The equipment shall be installed according to the instruction manual provided by manufacturer.
2. Service temperature: -60°C to 180°C.
3. To maintain the IP64 requirement according to EN/IEC 60079-0, BHL M25 and BHL 3/4NPT shall be made wrench tight. BHL M25 requires at least 5 threads engaged and shall be installed perpendicular to the mounting face and with a groove for sealing ring, ensuring that the sealing ring is evenly compressed against the mounting face. BHL 3/4NPT shall be made up wrench-tight and at least 3 ½ threads engaged.
4. To maintain the flameproof properties, BHL M25 shall be made wrench tight and requires at least 5 threads engaged. BHL 3/4NPT shall be made wrench tight and the threads length engaged shall be not less as the "L2" dimension according ANSI/ASME B1.20.1. When this cannot be realised at the final installation, the stopping plugs cannot be used for "Ex db" applications.

(18) Essential health and safety requirements:

Assured by compliance with standards set out in (9).

Certificates without signature shall not be valid. The Certificates may only be circulated in full including its schedule(s). Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail. The document is administrated under the following number: EX5A 105708 0001 Rev. 00

Doc. Name: Temp-ExNBG-TPS-EU-Type-Cert-Rev. 04

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 München • Germany

72/137 TÜV®

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT
TÜV SÜD

International Center for Quality Certification - ICQC Ltd.
63-19, Skolas street, Jurmala, LV-2016, Latvia
Phone: +371 27168371 E-mail: office@icqc.lv Web: www.icqc.lv
SIA „International Center for Quality Certification - ICQC"
Reģ. Nr.LV40103539825
Skolasiela 63-19, Jūrmala, LV-2016, Latvija

EU Notified Body
No. 2549

LATAK-S1-499

(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: **ICQC 19 ATEX 0424 X** **Issue: 1**

(4) Equipment: **FlameSpec Detector types: FLS-IR3-ASXX, FLS-IR3-H2-ASXX, FLS-UV-IR-ASXX, FLS-UV-IR-F-ASXX**

(5) Manufacturer: **Fire & Gas Detection Technologies, Inc**

(6) Address: **4222 E. La Palma Ave, Anaheim, CA 92807, USA**

(7) This equipment and any acceptable variation, also documents which are specified in the schedule to this certificate.

(8) The certification body ICQC, Notified body No. 2549 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and 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 to the Directive.
The examination and test results are recorded in confidential report no **424/2019/07/ATEX**

(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, EN 60079-7:2015, 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 schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture and supply of this equipment. These are not covered by the certificate

(12) The marking of the equipment or protective system shall include the following:

II 2 G Ex db IIC T5 Gb or II 2 G Ex db eb IIC T5 Gb and II 2D Ex tb IIIC T95 °C Db -55°C<Ta<75°C

II 2 G Ex db IIC T4 Gb or II 2 G Ex db eb IIC T4 Gb and II 2D Ex tb IIIC T105 °C Db -55°C<Ta<85°C

Director of Certification: Sergey Kovalev

International Center for Quality Certification • Notified Body 2549 • JŪRMALA, LATVIJA

Date of issue: 11 March, 2020
Jurmala, Latvia

Certificate without signature are void. This certificate may only be reproduced in its entirety and without any change, schedule included. Extracts or modifications must be authorized by SIA ICQC.

(13) **SCHEDULE**

(14) **to EU-TYPE EXAMINATION CERTIFICATE: ICQC 19 ATEX 0424 X** **Issue: 1**

(15) **Description of Equipment:**

FlameSpec Detector types: FLS-IR3-ASXX (DWG F120B0010), FLS-IR3-H2-ASXX (DWG F150B0010), FLS-UV-IR-ASXX (DWG F110B0010) and FLS-UV-IR-F-ASXX (DWG F160B0010) are infrared and UV/IR flame detectors, which provide fast response, high performance and reliable detection of all types of hydrocarbon and hydrogen fires (visible and non-visible).

The flame detector consists of electronic compartment in type of protection flameproof enclosure "d" and terminal compartment which meets the requirements of types of protection increased safety "e" and flameproof enclosure "d" with a two openings 3/4" NPT or M25 for cable glands.

The cable entry devices (cable glands) shall be certified with a appropriated type of protection. Unused entries shall be closed with certified blanking elements. Installing and use of cable gland and blanking elements shall be in compliance with EN 60079-14 current edition.

The detector is intended for use as part of a complex system and can be installed indoor or outdoor. The detector has a window heater, which automatically turns on by the ambient temperature below 5°C.

There are following features available in the flame detectors:

- Alarm Relay
- Fault Relay
- 4-20 mA and HART Output
- RS-485
- Data/Event logger
- Built-in-Test (BIT)

Technical characteristics:

Parameters	**Value**
Supply voltage	18 ... 32 V DC
Current Consumption	Standby: 100 mA Maximum: 200 mA all systems in operation (including window heater)
Alarm Relay, SPST, Normally open and normally closed	2A at 30 VDC
Fault Relay, SPST, Normally open	
Degree of protection	IP66 / IP68
Ambient temperature range	-55°C to +75°C or -55°C to +85°C

Routine tests:

Routine tests according to cl. 7.1 of EN 60079-7 shall be conducted for Exe terminal compartment with a test voltage of 500 V

Routine tests according to cl. 16 of EN 60079-1 shall be conducted for Exd electronic compartment with a test pressure of 1,36 MPa

(16) **Descriptive Documents:**

User Guide Release Number: F110V0010– FlameSpec-IR3; F120V0010 –FlameSpec-UV-IR; F150V0010– FlameSpec-IR3-H2; F160V0010 – FlameSpec-UV-IR-F

The drawings are listed in Evaluation report No: 424/2019/07/ATEX

Certificate History

Issue/Date	**Evaluation report**	**Comment**
Issue 0 from 21.01.2019	424/2019/07/ATEX	The release of the prime certificate.
Issue 1 from 11.03.2020	424/2019/07/ATEX	Manufacturer address change. Product design unchanged.

Certificate without signature are void. This certificate may only be reproduced in its entirety and without any change, schedule included. Extracts or modifications must be authorized by SIA ICQC.

(17) **Specific conditions of use:**
17.1 The Exd electronic compartment of flame detector has flamepaths which differ from those in IEC 60079-1. Repairs shall be conducted only by FG Detection Technologies LTD.

(18) **Essential Health and Safety Requirements:**
Met by compliance with the standards mentioned in clause (9).

Certificate without signature are void. This certificate may only be reproduced in its entirety and without any change, schedule included. Extracts or modifications must be authorized by SIA ICQC.

ITEM	Tag	950-FDZ-03104	: Flame Detector - FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10001511	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.**		606470			
Manufacturer	Fire and Gas DetectionTechnologies			**Model**		FlameSpec FLS-UV-IR-AS11			
Cert No.	ICQC 19 ATEX 0424X			**Equipment Ambient Temp.**		-55°C to +75°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	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	OK	

ITEM	Tag	950-FDZ-03104	: Flame Detector - FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001511	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	PL	
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	OK	
	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	950-FDZ-03104	: Flame Detector - FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001511	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

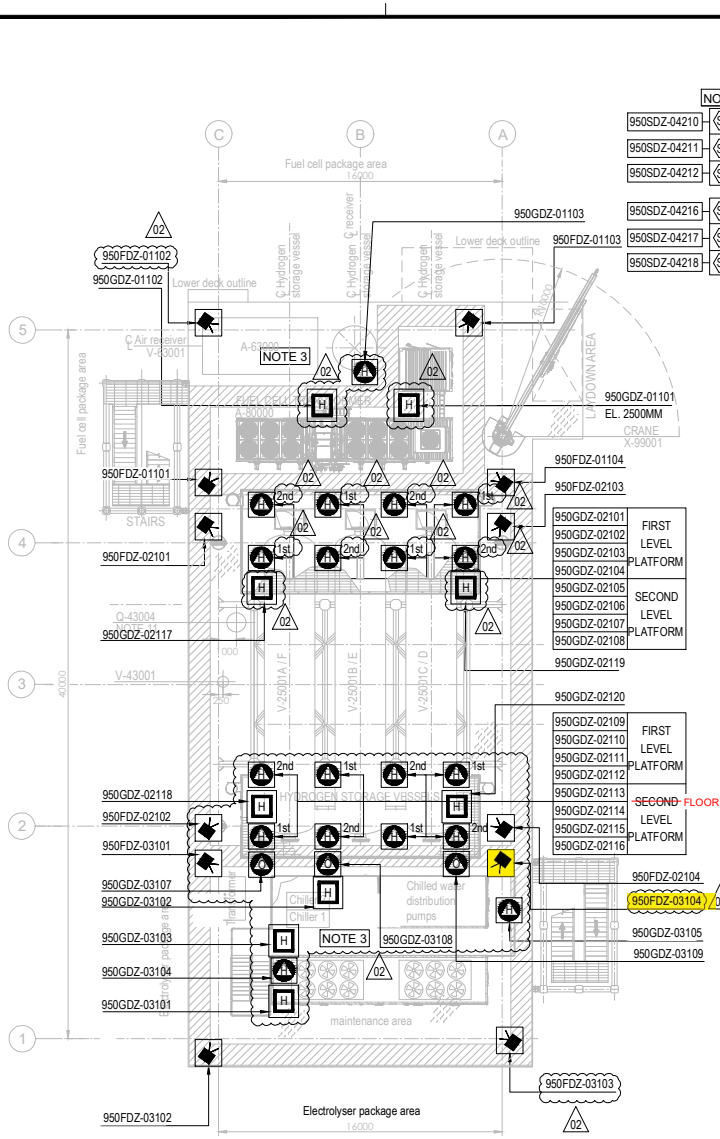
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

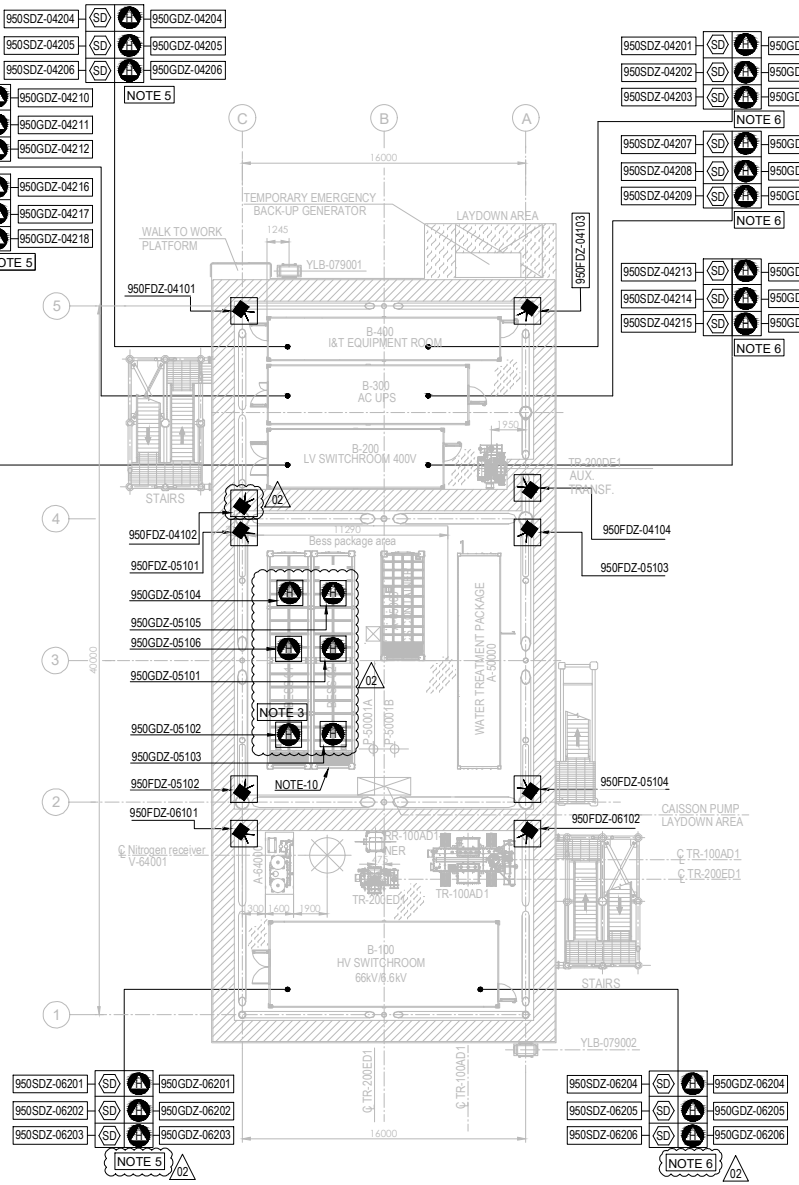
Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-11	2024-12-11	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-11T15:16:33.507Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-11T16:48:44.479Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

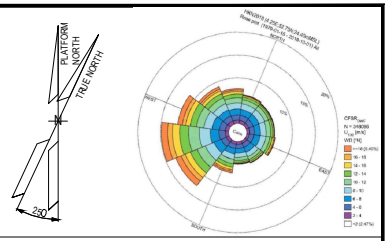


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS, TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 95OGDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_C	03/12/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

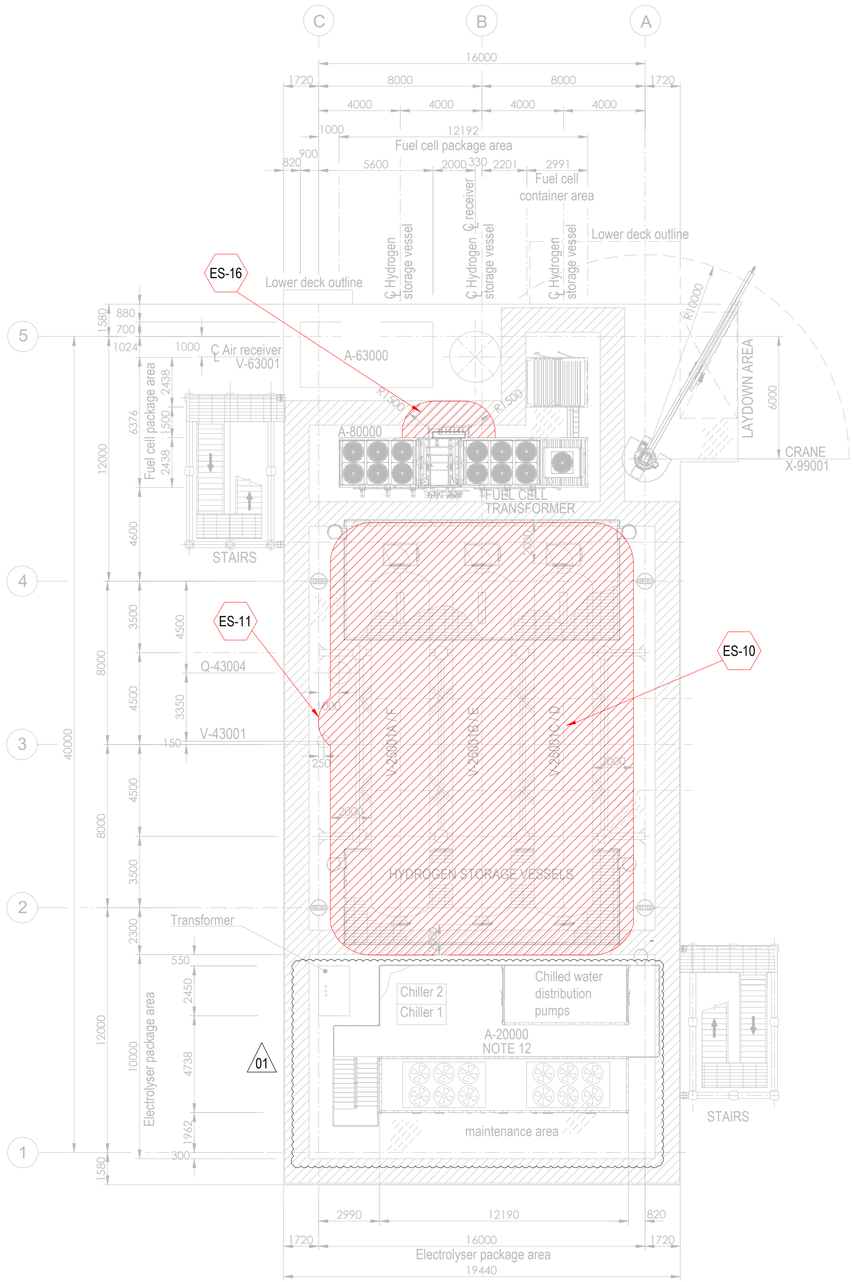
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

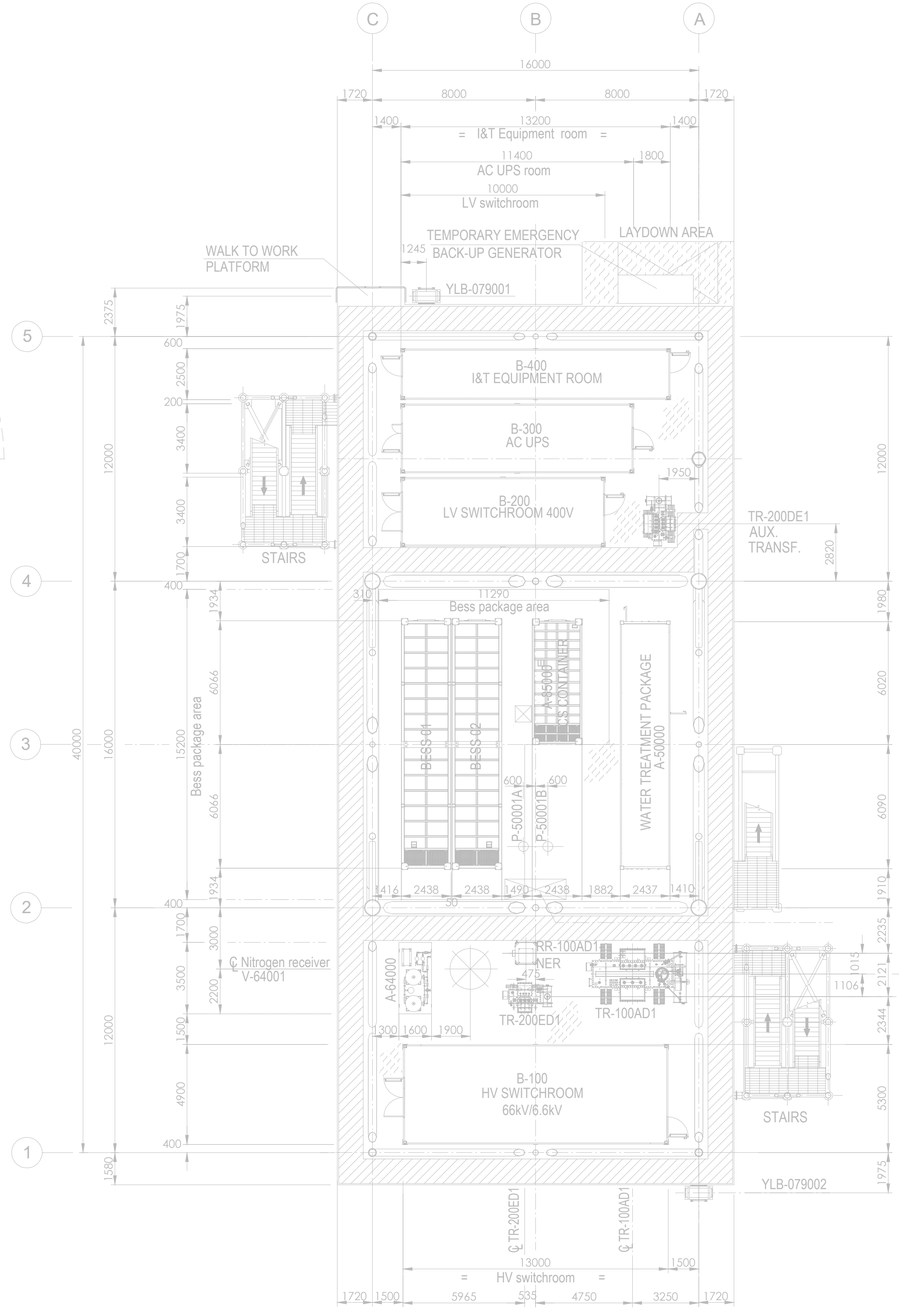
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 01



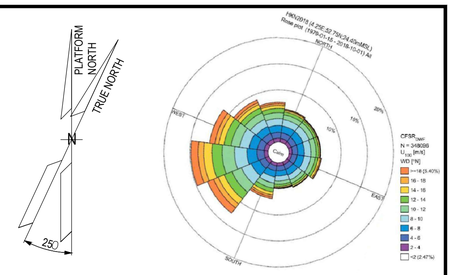
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

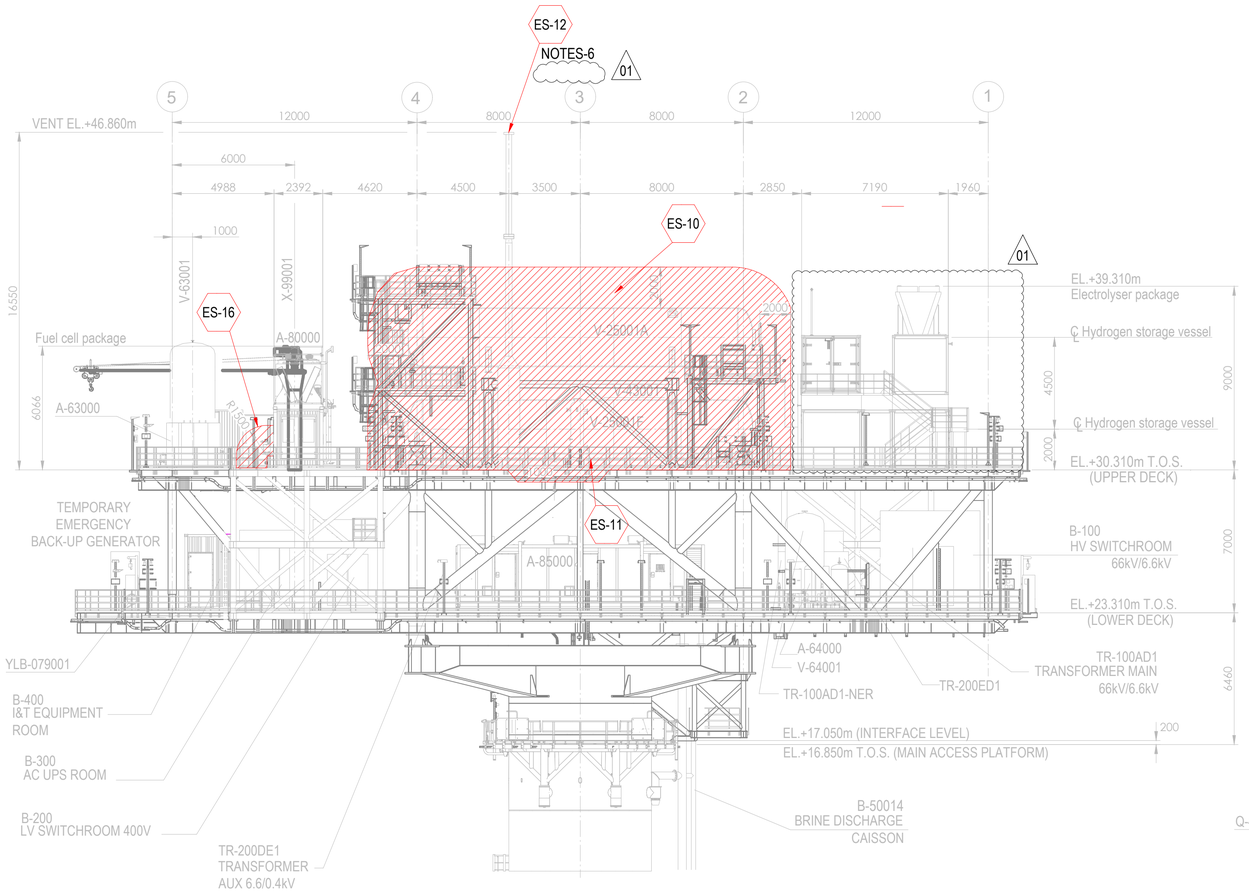
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

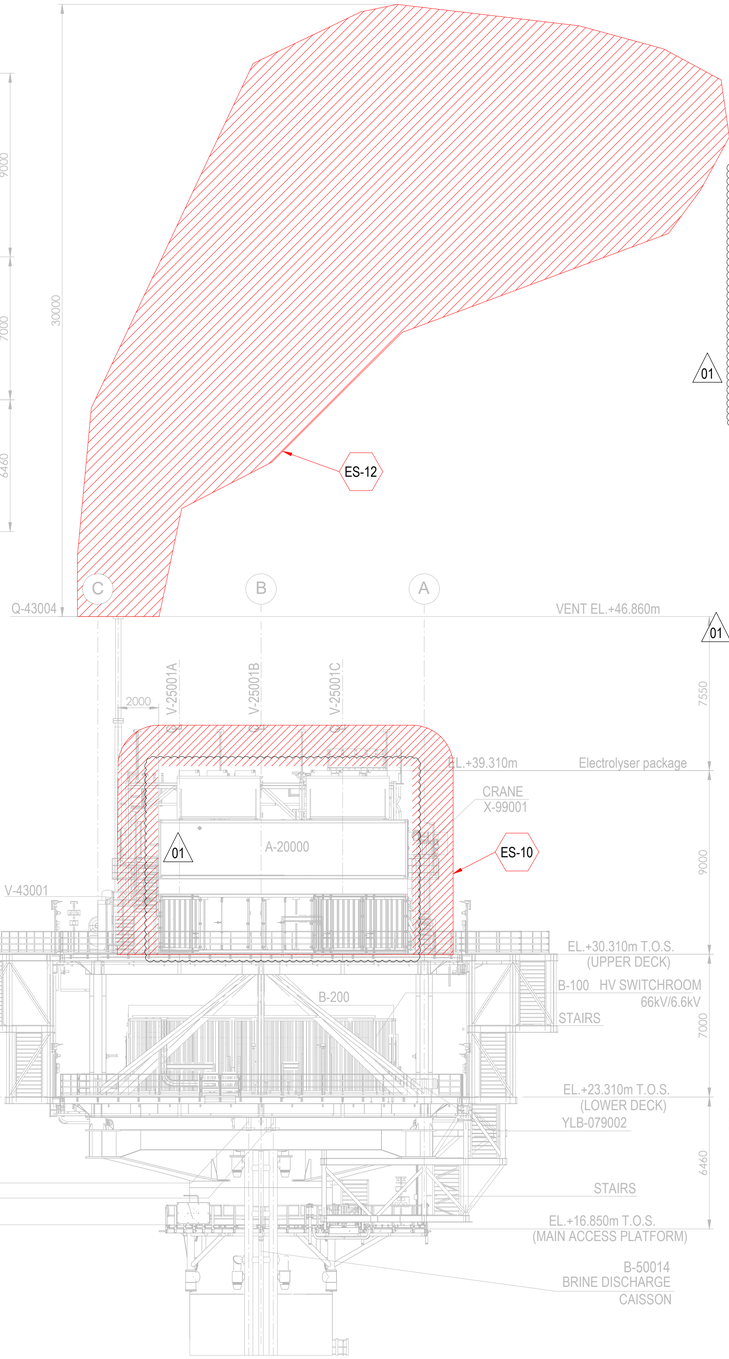
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



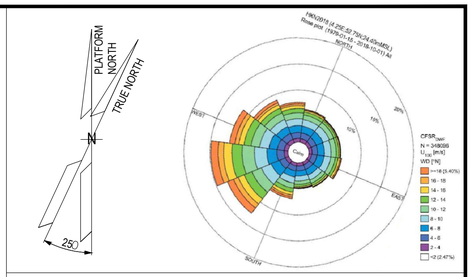
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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

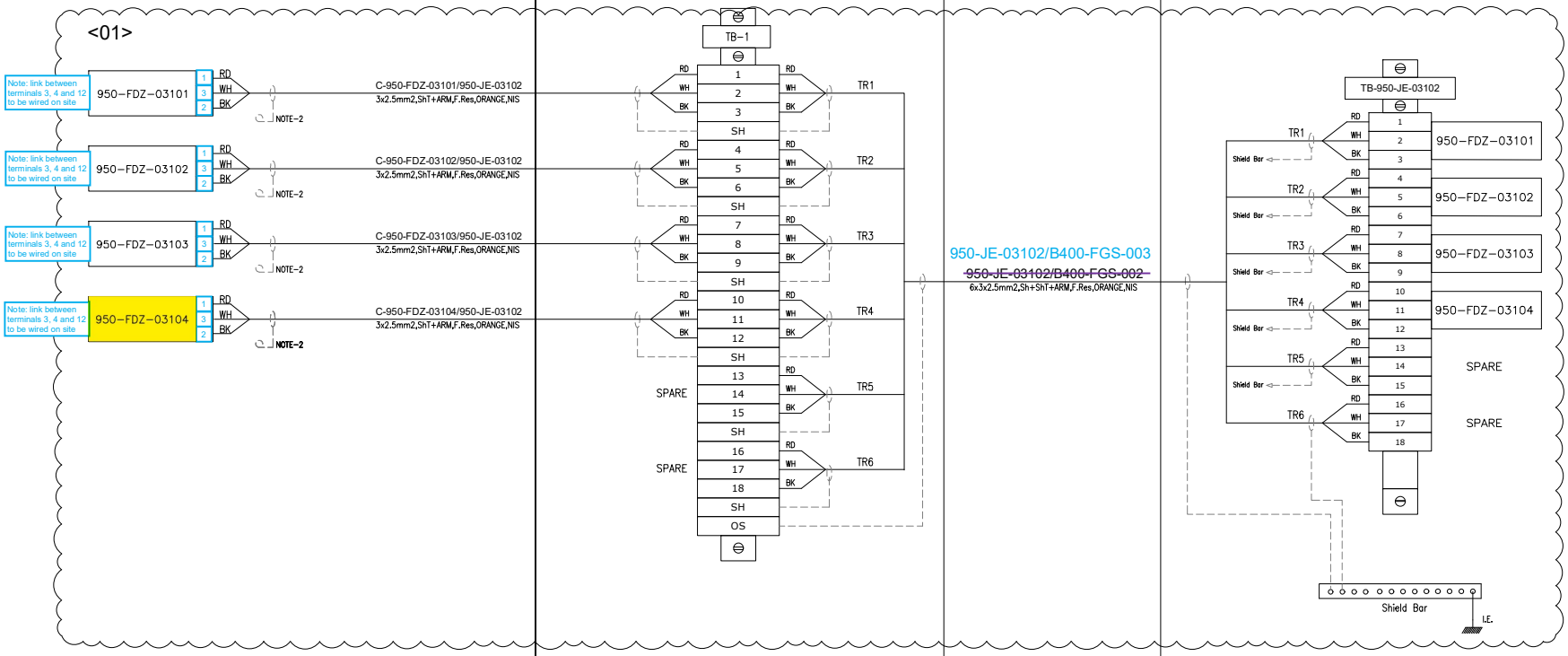
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

A1	DRAWING NO. 123A90-DDL-SAF-DL-30024	SHEET 001	REV. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03102	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03102

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

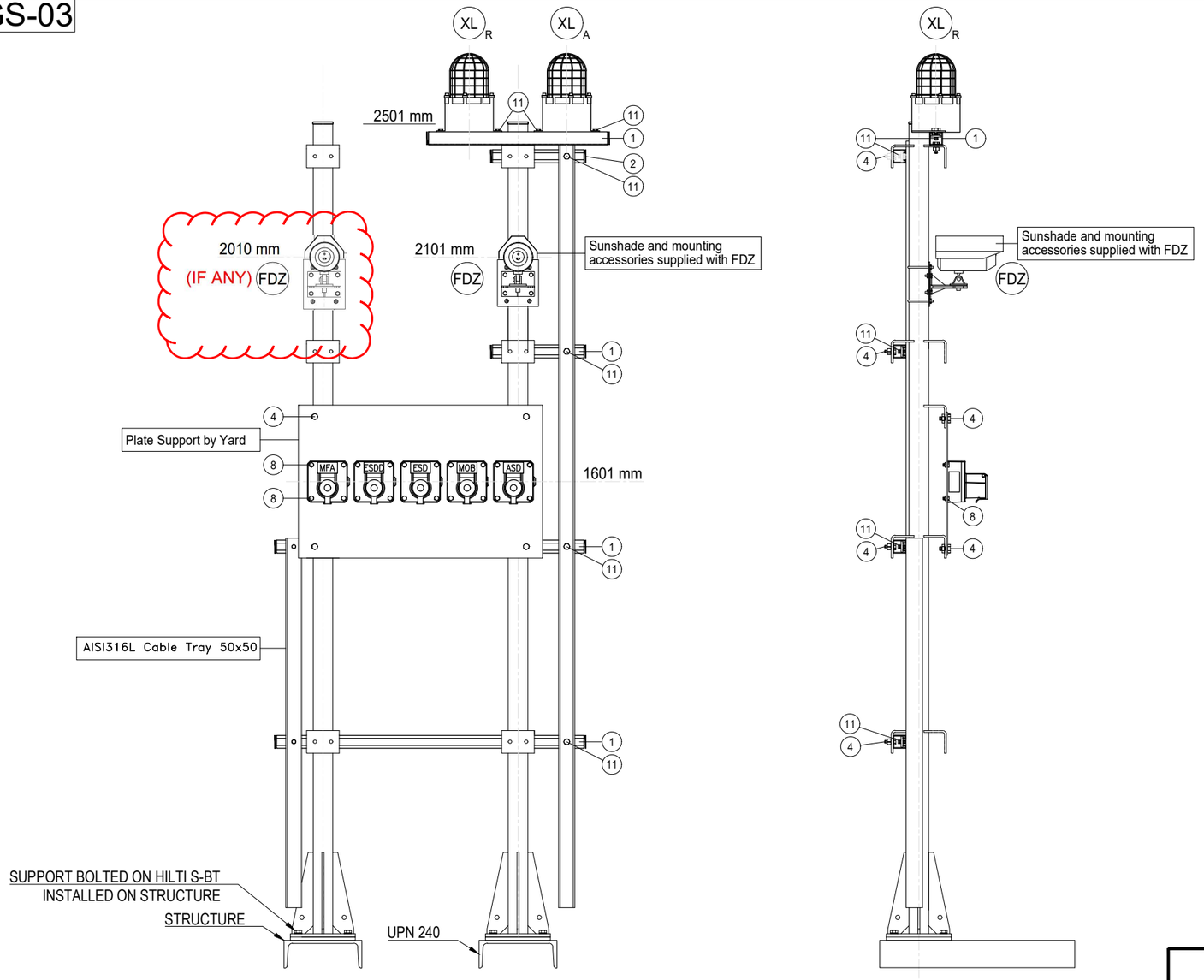
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File Name : 123A90-DDL-IN-DG-40016_Rev.01

FGS-03

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	6m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	18
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	20
11	AISI 316L SPRING NUT M8 FOR U-CHANNEL 41X41 + BOLT M8x35 + WASHER M8	10

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03103
	XL_R	BEACON - RED	950-XL-03104
	FDZ	FLAME DETECTOR	950-FDZ-03104 & 950-FDZ-02104
	ESDD	MANUAL CALL POINT CONNECTED TO SIS	950-ESDD-03101
	ESD	MANUAL CALL POINT CONNECTED TO SIS	950-ESD-03101
	MOB	MANUAL CALL POINT CONNECTED TO SIS	950-MOB-03101
	ASD	MANUAL CALL POINT CONNECTED TO SIS	950-ASD-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03104

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_E	13/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

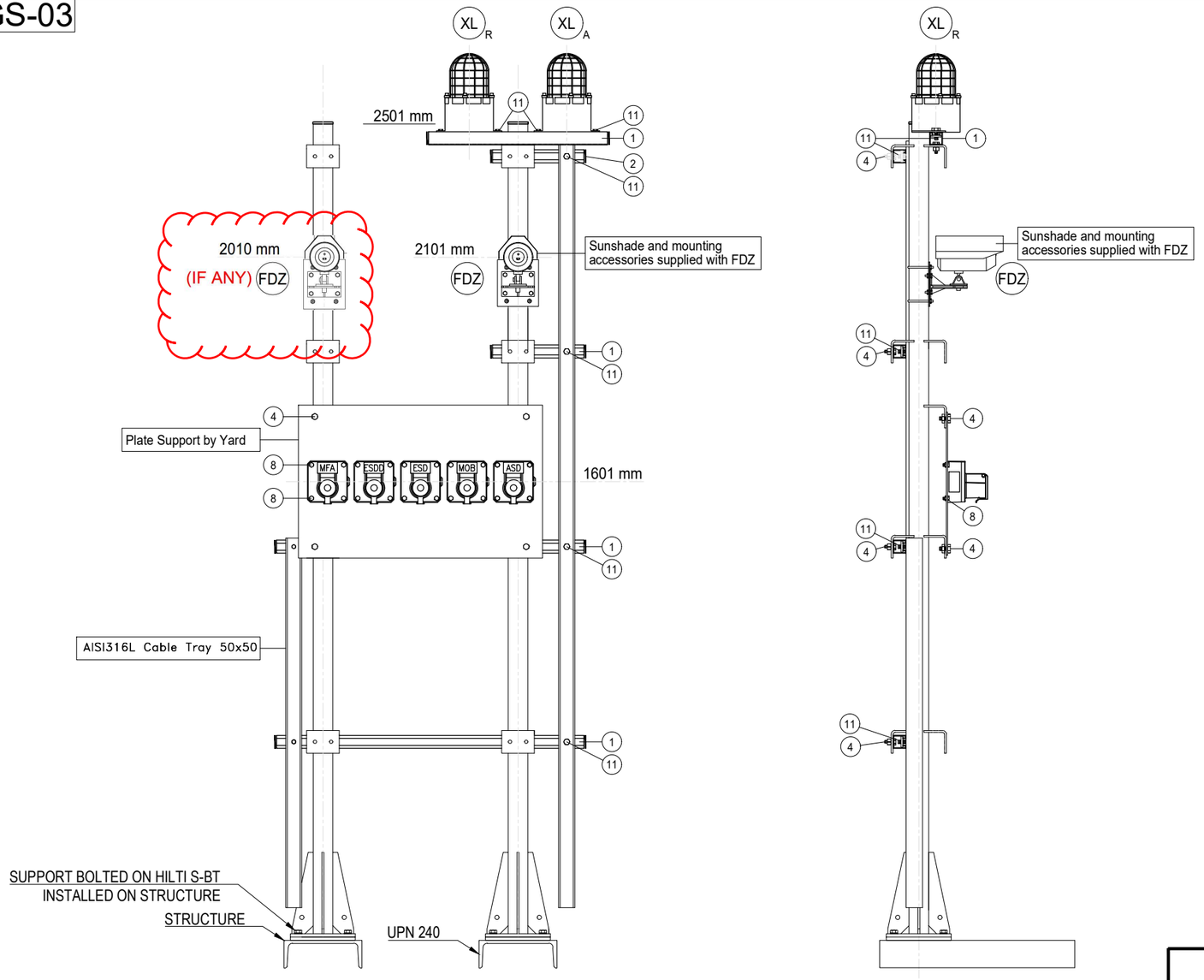
CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 022	REV. 01

FGS-03

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	6m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	18
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	20
11	AISI 316L SPRING NUT M8 FOR U-CHANNEL 41X41 + BOLT M8x35 + WASHER M8	10

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03103
	XL_R	BEACON - RED	950-XL-03104
	FDZ	FLAME DETECTOR	950-FDZ-03104 & 950-FDZ-02104
	ESDD	MANUAL CALL POINT CONNECTED TO SIS	950-ESDD-03101
	ESD	MANUAL CALL POINT CONNECTED TO SIS	950-ESD-03101
	MOB	MANUAL CALL POINT CONNECTED TO SIS	950-MOB-03101
	ASD	MANUAL CALL POINT CONNECTED TO SIS	950-ASD-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03104

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_F	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

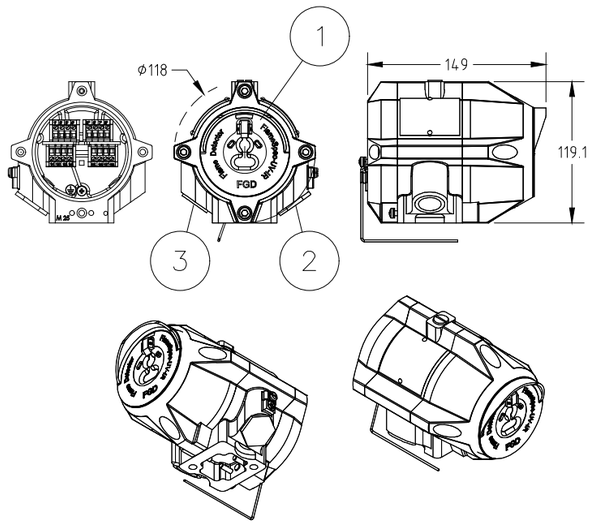
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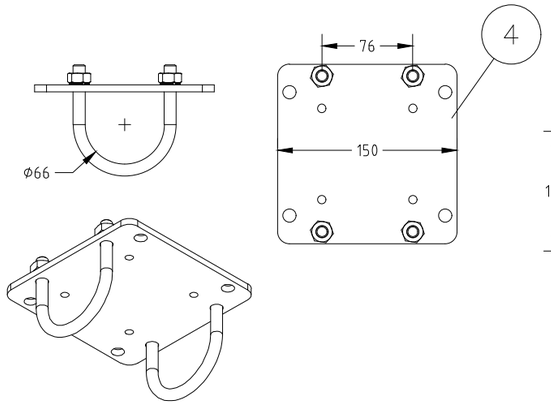
FLAME DETECTOR / 2" PIPE MOUNTING

ITEM	DESCRIPTIONS	NR
1	Flame Detector, FGD FlameSpec FLS-UV-IR-AS11	1
2	Reducer M25 - M20 Ex d AISI 316	1
3	Stop Plug M25 Ex d AISI 316	1
4	2 inch Mounting Kit, FGD F107X0050.00	1
5	Tilt Assy, FGD F110X0090.00	1
6	Weather Shield, FGD F107X0240.00	1
7	Stainless Steel Name Plate	
8		
9		
10		

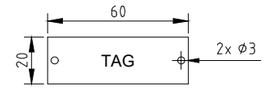
INSTALLATION QUANTITY

22



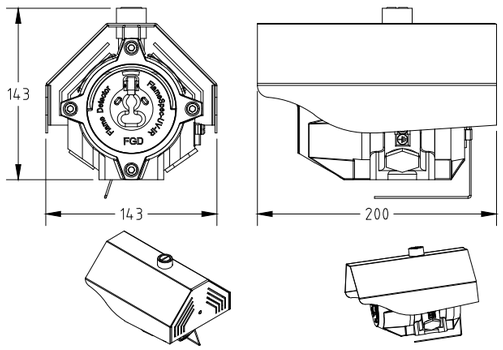


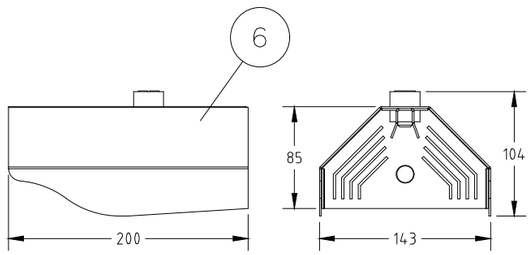
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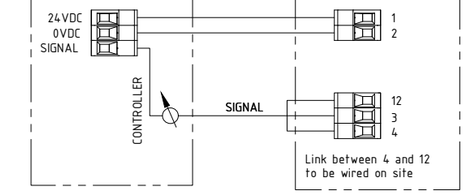


NOTE 5

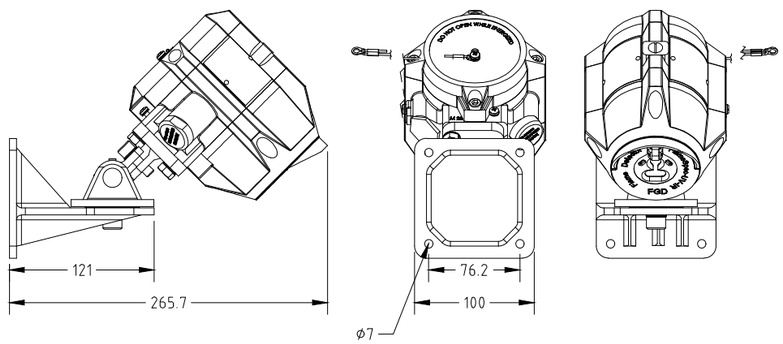
GA WEATHER SHIELD AND DETECTOR







INSTALLATION SCHEME



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 013

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FLAME DETECTOR / 2" PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-FDZ-01101
2	950-FDZ-01102
3	950-FDZ-01103
4	950-FDZ-01104
5	950-FDZ-02101
6	950-FDZ-02102
7	950-FDZ-02103
8	950-FDZ-02104
9	950-FDZ-03101
10	950-FDZ-03102
11	950-FDZ-03103
12	950-FDZ-03104
13	950-FDZ-04101
14	950-FDZ-04102
15	950-FDZ-04103
16	950-FDZ-04104
17	950-FDZ-05101
18	950-FDZ-05102
19	950-FDZ-05103
20	950-FDZ-05104
21	950-FDZ-06101
22	950-FDZ-06103

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING – TAG

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

A3	DRAWING NO.	SHEET	REV.
	1724000821-IN-DA-00003	014	02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FLAME DETECTOR

POS.	TAG NUMBER	SERVICE
1	950-FDZ-01101	FZ-01 FUEL CELL PK AREA
2	950-FDZ-01102	FZ-01 FUEL CELL PK AREA
3	950-FDZ-01103	FZ-01 FUEL CELL PK AREA
4	950-FDZ-01104	FZ-01 FUEL CELL PK AREA
5	950-FDZ-02101	FZ-02 H2 STORAGE VESSELS AREA
6	950-FDZ-02102	FZ-02 H2 STORAGE VESSELS AREA
7	950-FDZ-02103	FZ-02 H2 STORAGE VESSELS AREA
8	950-FDZ-02104	FZ-02 H2 STORAGE VESSELS AREA
9	950-FDZ-03101	FZ-03 ELECTROLYZER PK AREA
10	950-FDZ-03102	FZ-03 ELECTROLYZER PK AREA
11	950-FDZ-03103	FZ-03 ELECTROLYZER PK AREA
12	950-FDZ-03104	FZ-03 ELECTROLYZER PK AREA
13	950-FDZ-04101	FZ-04 B-400/B-300/B-200 AREA
14	950-FDZ-04102	FZ-04 B-400/B-300/B-200 AREA
15	950-FDZ-04103	FZ-04 B-400/B-300/B-200 AREA
16	950-FDZ-04104	FZ-04 B-400/B-300/B-200 AREA
17	950-FDZ-05101	FZ-05 BESS AREA
18	950-FDZ-05102	FZ-05 BESS AREA
19	950-FDZ-05103	FZ-05 BESS AREA
20	950-FDZ-05104	FZ-05 BESS AREA
21	950-FDZ-06101	FZ-06 B-100 AREA
22	950-FDZ-06103	FZ-06 B-100 AREA

File: 1724000821-IN-DS-00004-02.xlsx
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FlameSpec
UV-IR
UV-IR Flame Detector



The FlameSpec UV-IR will detect fires and explosions extremely quickly, thereby allowing mitigation steps to be initiated more rapidly to limit event escalation.

Introduction

The FlameSpec-UV-IR flame detector provides ultra-fast response, high performance and reliable detection of a large variety of fires including hydrocarbon fires (visible and non-visible), as well as hydrogen and methane/hydrogen mixed fires. The detector addresses slow growing fires as well as fast eruptions of fire using improved UV-IR technology. The detector operates in all weather and light conditions.

Key Benefits

- High immunity to false alarm
- High sensitivity – up to 100 ft. (30m) for a 1 ft^2 (0.1m^2) n-heptane pan fire.
- Hydrocarbon and non-hydrocarbon flame detection.
- Ultra-fast detection mode detection within 5 milliseconds for fireballs or explosions
- High speed (<0.5s) model [X5] available for compliance with NFPA 33.
- Four sensitivity levels.
- Universal outputs, 3 and 4 wire, 4-20 mA sink / source, Fire, Auxiliary and Fault Relays. RS485 port using Modbus RTU.
- Event logger – alarms, faults and other relevant events are logged to non-volatile memory
- Built-in-Test (BIT) – Automatic and manual self-test of window cleanliness and overall detector operation.
- Dirty optics warning for preventive maintenance needs.
- HART® 7, for configuration & maintenance - option available.
- Window heater to avoid condensation and icing.
- Stainless steel tilt mount with horizontal and vertical adjustment.
- Functional safety - SIL 2 capable - option available.
- Detect high UV (sparks and arcs) or IR levels via auxiliary relay and 4-20mA.

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave. Anaheim, CA 92807 USA
Tel: (+1) 714-671-8500 | support@fg-detection.com
Version: F110V0010.08 • May 2023

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Response Characteristics

Fuel	Size	Sensitivity	Distance ft. (m)	Avrg Resp.Time (s)
N-Heptane	1 x 1 ft.	Extreme	98 (30)	2.0
N-Heptane	1 x 1 ft.	High	75 (23)	1.7
N-Heptane	1 x 1 ft.	Medium	49 (15)	1.0
N-Heptane	1 x 1 ft.	Low	16 (5)	1.0
Gasoline	2 x 2 ft.	Extreme	197 (60)	3.3
Gasoline	1 x 1 ft.	Extreme	98 (30)	1.8
Gasoline	1 x 1 ft.	Medium	49 (15)	1.3
Methane	32-in Plume	Extreme	59 (18)	1.4
Methane	32-in Plume	Medium	30 (9)	0.9
LPG	32-in Plume	Extreme	75 (23)	1.2
LPG	32-in Plume	High	56 (17)	1.6
LPG	32-in Plume	Medium	33 (10)	1.2
LPG	32-in Plume	Low	13 (4)	1.2
Diesel	1 x 1 ft.	Extreme	75 (23)	2.6
Diesel	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Extreme	75 (23)	3.3
JP5	1 x 1 ft.	High	56 (17)	1.8
JP5	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Low	16 (5)	1.2
Kerosene	1 x 1 ft.	Extreme	75 (23)	1.8
Kerosene	1 x 1 ft.	Medium	36 (11)	0.9
Methanol	1 x 1 ft.	Extreme	52 (16)	0.8
Methanol	1 x 1 ft.	High	43 (13)	3.2
Methanol	1 x 1 ft.	Medium	30 (9)	1.3
Methanol	1 x 1 ft.	Low	10 (3)	2.7
Ethanol	1 x 1 ft.	Extreme	62 (19)	4.1
Ethanol	1 x 1 ft.	Medium	31 (9.5)	2.9
Isopropanol	1 x 1 ft.	Extreme	75 (23)	2.2
Isopropanol	1 x 1 ft.	Medium	36 (11)	0.8
Polypropylene	1 x 1 ft.	Extreme	49 (15)	1.4
Polypropylene	1 x 1 ft.	Medium	23 (7)	0.9
Hydrogen	32-in Plume	Extreme	66 (20)	6.4
Hydrogen	32-in Plume	Medium	33 (10)	1.0
Syngas (30%CH_4:70%H_2)	32-in Plume	Extreme	59 (18)	3.2
Syngas (30%CH_4:70%H_2)	32-in Plume	Medium	33 (10)	1.2

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Immunity to False Alarm

False Alarm Source	Modulated		Unmodulated	
	Distance ft. (m)	Response	Distance ft. (m)	Response
Sunlight, Direct, Reflected		No Alarm		No Alarm
Incandescent frosted glass light, 300W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Fluorescent, 70W (3x23.3W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric arc	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Arc welding	10.0 (3.0)	No Alarm	10.0 (3.0)	No Alarm
Radiation heater, 2000W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Halogen lamp (500W) non-shielded	7.0 (2.0)	No Alarm	7.0 (2.0)	No Alarm
Halogen lamp (1000W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Mercury vapor lamp 160Wx3	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Exhausts	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Projector led	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Solenoid bell	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
soldering iron	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric Drill	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

FIRE DETECTION	**Detection time and distance**	5ms for fast burst of explosion 1s for 1 ft² (0.1m²) n-heptane pan fire at 0–50 ft. (0–15m) < 2s for 1 ft² (0.1m²) n-heptane pan fire at 50–100 ft. (15–30m)
	Sensitivity Range	4 sensitivity ranges: Extreme, High, Medium, Low
	Field of view (IR detection)	90° Horizontal, 80° Vertical
	Time Delay	0-30 seconds
	Built in Test	Automatic and Manual
ELECTRICAL SPECIFICATIONS	**Operating Voltage**	24 VDC nominal (18-32 VDC)
	Current Consumption	Standby: 120mA 180mA all systems in operation (including window heater)
	Electrical Entries	2x cable and conduit entries 3/4" NPT(F) or M25x1.5
	Wiring	14-17 AWG (2.5–1.0 mm²)
OUTPUTS	**Relays**	SPST volt-free contacts rated 2A at 30 VDC 3 relays: Alarm & Auxiliary – normally open; Fault – normally closed
	0-20mA (stepped) current output	3 wire and 4 wire (isolated) configurations (sink and source) HART® rev 7.0 (option available)
	Indication	Tri-color LED (Green, Yellow, Red)
	Modbus	RTU compatible on RS-485
MECHANICAL SPECIFICATIONS	**Size**	5.51 x 3.54 × 3.54" (140×90×90mm)
	Weight	Detector (Stainless Steel 316): 6.6 lbs. (3.0 kg) Tilt mount (Stainless Steel 316): 3.3 lbs. (1.5 kg)
ENVIRONMENTAL SPECIFICATIONS	**Temperature Range**	Operating: -67°F to +185°F (-55°C to +85°C) Storage: -67°F to +185°F (-55°C to +85°C)
	Humidity	Up to 99% (RH), non-condensing
	Ingress Protection	IP66 & 68 (2m, 24hr); NEMA 4X & 6P
APPROVALS	**ATEX**	ATEX: II 2 G D Ex db IIC T5 Gb or Ex db eb IIC T5 Gb and Ex tb IIIC T95°C Db -55°C<Ta<75°C Ex db IIC T4 Gb or Ex db eb IIC T4 Gb and Ex tb IIIC T105°C Db -55°C<Ta<85°C
	IECEx, INMETRO & PESO	Ex db IIC T5 Gb -50°C≤Ta≤75°C Ex db IIC T4 Gb -50°C≤Ta≤85°C
	FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 Class I, Zone 1, AEx/Ex db IIC T4 Gb T4 -50°C≤Ta≤85°C T5 -50°C≤Ta≤75°C
	EAC CU TR	1Ex d IIC T5 Gb or 1Ex de IIC T5 Gb and Ex tb IIIC T95°C Db -55°C≤Ta≤75°C 1Ex d IIC T4 Gb or 1Ex de IIC T4 Gb and Ex tb IIIC T105°C Db -55°C≤Ta≤85°C
	Performance	ANSI FM 3260 EN 54-10
	Functional safety	Certified SIL2 capable, per IEC 61508:2010 High & Low demand (option available)

ACCESSORIES	**Tilt mount, model FLS-TMO-S01**	**High vibration mounting bracket, model FLS-MIL-S01**
	Weather cover, model FLS-WCO-S01	**Flame simulator, model FLS-FSIM-UV-IR-KIT**
	2" & 3" pole mount adapter, model FLS-PMA-S23	**Airshield, model FLS-ASD-S01**
	Duct mount with window, model FLS-DMW-S01	**Duct mount for airshield, model FLS-DMX-S01**
WARRANTY	**5 years**	

FIRE & GAS DETECTION TECHNOLOGIES INC.

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Specifications subject to change without notice.

FlameSpec

FLS-FSIM

Flame Simulator Family



The FlameSpec Flame Simulator range provides fast and convenient detector verification in the field.

Introduction

Flame simulators are often used by industry to perform detector testing during commissioning and periodic system testing. FlameSpec simulators differ from many competing products because they test the active sensors and detection algorithms of the devices without using “bypass” techniques to trick the detector into responding.

The FSIM range is lightweight, simple to use and has a modern ergonomic design. Suitable for use in hazardous areas, the FSIM-IR3 has an extended trigger distance of up to 30 feet (10 meters) from the detector.

Three FSIM models are available, depending on the FlameSpec Detector to be tested, IR3, IR3-H2 and UV-IR.

Key Benefits

- Tests the active sensors and detection algorithms, without using “bypass” techniques.
  - No tricks, detector performance assured.
- Works from distance up to 30 feet (10 meters).
  - Reduces the need for scaffolding.
- Hazardous area use approved.
  - Hot work permits not needed required.
- Lightweight and simple to use.
  - More than 1,000 activations between charges.
- Includes carrying strap, protective storage case, battery charger and operating instructions.
- Easy to transport & supplied with everything needed.
- Complementary to FlameSpec Detector inbuilt test features.
  - Enables full end to end (loop) system test.

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Version: F300V0010.04 • Oct 2023

FlameSpec-FLS-FSIM

Flame Simulator Family

	Simulator Kits Part Nos	FLS-FSIM-IR3-KIT	FLS-FSIM-IR3-H2-KIT	FLS-FSIM-UV-IR-KIT
	Detector type	FLS-IR3[1] FLS-IR3-HD[1]	FLS-IR3-H2 FLS-IR3-H2-HD	FLS-UV-IR FLS-UV-IR-HD
OPERATION DISTANCES	**Detector Sensitivity**	ft. m	ft. m	ft. m
	Extreme	30 9.0	30 9.0	42.5 13.0
	High	20 6.0	20 6.0	26 8.0
	Medium	10 3.0	10 3.0	20 6.0
	Low	3.3[2] 1.0[2]	3.3[2] 1.0[2]	6.6 2.0
ELECTRICAL SPECIFICATIONS	**Operating Voltage nominal, V**	3.7	3.7	3.7
	Number of activations between charging	~1000	~1000	~50
	Battery Capacity, mAh	>3000	>3000	>3000
	Charging time, hours	up to 3	up to 3	up to 3
	Indication	3 Color LED (Green, Yellow, Red)		
	All Simulator Models			
MECHANICAL SPECIFICATIONS	**Size**	3.9 x 3.9 x 7.8" (100 x 100 x 200mm)		
	Weight	3.96 lbs. (1.8 kg)		
	Simulator Enclosure Material	Painted Aluminum LM25		
ENVIRONMENTAL SPECIFICATIONS	**Ingress Protection**	IP65 (NEMA 4X)		
	Humidity	up to 99% (RH), non-condensing		
	Operating temperature	Min: −4°F (−20°C) Max: +122°F (+50°C)		
APPROVALS	**Explosion proof**	ATEX Ex II 2 G Ex db ib op is IIC T6 Gb Ex II 2 D Ex tb ib op is IIIC T85°C Db -20°C<Ta<+50°C		
ACCESSORIES included in kits	**Carrying Case**	FLS-FSIM-CASE		
	Carrying Strap	FLS-FSIM-STRAP		
	Cover Tool	FLS-FSIM-TOOL		
	Allen Key	FLS-FSIM-ALLEN		
	Battery Charger	FLS-FSIM-CHRGR		
WARRANTY	**3 Years**			

[1]not CO2L variant
[2]with collimator removed

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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
253	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
254	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
255	02	950-FDZ-02103	FLAME DETECTOR	FZ-02 H2 STORAGE VESSELS AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
256	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
257	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
258	02	950-FDZ-02104	FLAME DETECTOR	FZ-02 H2 STORAGE VESSELS AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
259	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
260	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
261	02	950-FDZ-03101	FLAME DETECTOR	FZ-03 ELECTROLYZER PK AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
262	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
263	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
264	02	950-FDZ-03102	FLAME DETECTOR	FZ-03 ELECTROLYZER PK AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
265	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
266	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
267	02	950-FDZ-03103	FLAME DETECTOR	FZ-03 ELECTROLYZER PK AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
268	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
269	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
270	02	950-FDZ-03104	FLAME DETECTOR	FZ-03 ELECTROLYZER PK AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
271	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
272	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
273	02	950-FDZ-04101	FLAME DETECTOR	FZ-04 B-400/B-300/B-200 AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
274	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
275	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
276	02	950-FDZ-04102	FLAME DETECTOR	FZ-04 B-400/B-300/B-200 AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
277	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
278	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
279	02	950-FDZ-04103	FLAME DETECTOR	FZ-04 B-400/B-300/B-200 AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
280	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES

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Notified Body 2549

EN ISO/IEC 17065
S1-499

(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: **ICQC 19 ATEX 0424 X** **Issue: 2**

(4) Equipment: **FlameSpec Detector types: FLS-IR3-ASXX, FLS-IR3-H2-ASXX, FLS-UV-IR-ASXX, FLS-UV-IR-F-ASXX**

(5) Applicant: **Fire & Gas Detection Technologies, Inc**
4222 E. La Palma Avenue, Anaheim, CA 92807, USA

(6) Manufacturer: **Fire & Gas Detection Technologies, Inc**
4222 E. La Palma Avenue, Anaheim, CA 92807, USA

(7) This equipment and any acceptable variations, also documents which are specified in the schedule to this certificate.

(8) The certification body ICQC, Notified body No. 2549 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and 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 to the Directive.
The examination and test results are recorded in confidential report No. **424-01/2023/04/ATEX**

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

EN IEC60079-0:2018, EN 60079-1:2014, EN 60079-7:2015, 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 schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture and supply of this equipment. These are not covered by the certificate

(12) The marking of the equipment or protective system shall include the following:

II 2 G Ex db IIC T5 Gb or II 2 G Ex db eb IIC T5 Gb and II 2D Ex tb IIIC T95 °C Db -55°C<Ta<75°C

II 2 G Ex db IIC T4 Gb or II 2 G Ex db eb IIC T4 Gb and II 2D Ex tb IIIC T105 °C Db -55°C<Ta<85°C

Head of Certification Body: Sergey Kovalev

Date of issue: 07 February 2023
Jurmala, Latvia

Certificate without signature is void. This certificate may only be reproduced in its entirety and without any change, schedule included. Extracts or modifications must be authorized by SIA ICQC.

(13) **SCHEDULE**

(14) **to EU-TYPE EXAMINATION CERTIFICATE: ICQC 19 ATEX 0424 X** **Issue: 2**

(15) **Description of Equipment:**

Optical Flame Detectors types: FLS-IR3-ASXX, FLS-IR3-H2-ASXX, FLS-UV-IR-ASXX, FLS-UV-IR-F-ASXX are infrared and UV/IR flame detectors, which provide fast response, high performance and reliable detection of all types of hydrocarbon and hydrogen fires (visible and non-visible).

The last four symbols in the type designation:
A – ATEX certified
S – stainless steel enclosure
X – openings for M25 (1) or 3/4" NPT (2) cable glands
X – symbol for options, not affecting explosion protection.

The flame detector consists of electronic compartment in type of protection flameproof enclosure "d" and terminal compartment in type of protection "d" or increased safety "e"with two openings 3/4" NPT or M25 for cable glands.

The cable entry devices (cable glands) shall be certified with an appropriated type of protection. Unused entries shall be closed with certified blanking elements. Installing and use of cable gland and blanking elements shall be in compliance with EN 60079-14 current edition.

The detector is intended for use as part of a complex system and can be installed indoor or outdoor. The detector has a window heater, which automatically turns on by the ambient temperature below 5^{0}C.

There are following features available in the flame detectors:
- Alarm Relay
- Fault Relay
- 4-20 mA and HART Output
- RS-485
- Data/Event logger
- Built-in-Test (BIT)

Technical characteristics:

Parameter	Value
Supply voltage	18 ... 32 V DC
Current Consumption	• Standby: 210 mA Maximum: 300 mA all systems in operation (including window heater)
Alarm Relay, SPST, Normally open and normally closed	2A at 30 VDC
Fault Relay, SPST, Normally open	
Degree of protection	IP66 / IP68
Ambient temperature range	-55°C to +75°C or -55°C to +85°C

Routine tests:
Routine tests according to cl. 7.1 of EN 60079-7 shall be conducted for Exe terminal compartment with a test voltage of 500 V
Routine tests according to cl. 16 of EN 60079-1 can be omitted because the enclosure was tested at four times reference pressure.

Certificate without signature is void. This certificate may only be reproduced in its entirety and without any change, schedule included. Extracts or modifications must be authorized by SIA ICQC.

Variation 1 - This variation introduced the following changes:
Manufacturer address update. Product design unchanged.

Variation 2 - This variation introduced the following changes:
Changing the design of the partition wall and cemented joint of the transit PCB between the terminal and electronic compartment.

(16) **Descriptive Documents:**

User Guide Release Number	F120V0020– FlameSpec-IR3 F150V0020– FlameSpec-IR3-H2 F110V0020 – FlameSpec-UV-IR & FlameSpec-UV-IR-F

The drawings are listed in Evaluation report No. 424-01/2023/04/ATEX

Certificate History:

Issue/Date	Evaluation report	Comment
Issue 0 from 21.01.2019	424/2019/07/ATEX	The release of the prime certificate.
Issue 1 from 11.03.2020	424/2019/07/ATEX	The introduction of Variation 1.
Issue 2 from 07.02.2023	424-01/2023/04/ATEX	The introduction of Variation 2.

(17) **Specific conditions of use:**
17.1 The Exd electronic compartment of flame detector has flamepaths which differ from those in IEC 60079-1. Repairs shall be conducted only by Fire & Gas Detection Technologies Inc.

(18) **Essential Health and Safety Requirements:**
Met by compliance with the standards mentioned in clause (9).

Certificate without signature is void. This certificate may only be reproduced in its entirety and without any change, schedule included. Extracts or modifications must be authorized by SIA ICQC.

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres Directive 94/9/EC**

(1) # EC-TYPE EXAMINATION CERTIFICATE

(3) Number of the EC type examination certificate: **INERIS 14ATEX0029X**

(4) Equipment or protective system:

FITTING UNITS TYPE RE**** or RE******* or PL**** or NP*** or EM*** or ELF***

(5) Manufacturer: **RIBCO**

(6) Address: Via dei Mille, 12
20061 Carugate (MI)-ITALY

(7) This equipment or protective system and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

(8) INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC of the 23rd March 1994, and accredited by COFRAC under number 5-0045 for certification of products and services (scope of accreditation available on the website www.cofrac.fr) certifies that this equipment or protective system fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, described in annex II of the Directive.

The examinations and the tests are consigned in report No 028198/14.

(9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 60079-0	:	2012/A11	:2013
EN 60079-1	:	2007	
EN 60079-7	:	2007	
EN 60079-31	:	2009	

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

Parc Technologique Alata BP 2 F-60550 Verneuil-en-Halatte
tél + 33(0)3 44 55 66 77 **fax** + 33(0)3 44 55 66 99 **internet** www.ineris.fr

Institut national de l'environnement industriel et des risques
Etablissement public à caractère industriel et commercial - RCS Senlis B 381 984 921 - Siret 381 984 921 00019 - APE 7120B

(10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protective system is subjected to the special conditions for safe use, mentioned in the annex of this certificate.

(11) This EC type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system, these are not covered by this certificate.

(12) The marking of the equipment or the protective system will have to contain:

Ex I M2 Ex II 2 GD

Verneuil-en-Halatte, 2014.06.26

ATMOSPHERES EXPLOSIVES ORGANISME NOTIFIE INERIS NOTIFIED BODY EXPLOSIVE ATMOSPHERES

The Chief Executive Officer of INERIS
By delegation
T. HOUEIX
Ex Certification Officer

(13) # ANNEX

(14) EC TYPE EXAMINATION CERTIFICATE N°INERIS 14ATEX0029X

(15) DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM

This series of fitting units is composed by adapters, plugs, nipples and 90°bends can be made in EN AW-6060, CW614N (OT58), AISI 316L or ASTM A105.

It gets the degree of protection IP66 according to the EN 60529 standard.

PARAMETERS RELATING TO THE SAFETY

Size of threaded joints:

Taper threading	:	NPT	:	3/8" NPT up to 3" NPT.
Cylindrical threading	:	ISO-262 and ISO965-1/2/3	:	M16 x 1.5 mm up to M90 x 1.5 mm.

Operating temperature:

-40°C to +100°C with EPDM O-ring;

-60°C to +180°C with silicone O-ring.

MARKING

Marking has to be readable and indelible; it has to include the following indications:

a) Marking for units without aluminum

RIBCO
20061 Carugate (MI)-ITALY
RE****** or RE******* or PL**** or NP*** or EM*** or ELF***
INERIS 14ATEX0029X
(Year of construction)
Ⓔx I M2 Ⓔx II 2 GD
Ex d I Mb
Ex d IIC Gb
Ex e IIC Gb
Ex tb IIIC Db IP66

On the small equipments, the marking can be reduced:

RIBCO-I
RE****** or RE******* or PL**** or NP*** or EM*** or ELF***
(Year of construction)
INERIS 14ATEX0029X
Ⓔx I M2 Ⓔx II 2 GD
Ex d/e/tb
IP66

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

b) Marking for units in aluminum

RIBCO
20061 Carugate (MI)-ITALY
RE****** or RE******* or PL**** or NP*** or EM*** or ELF***
INERIS 14ATEX0029X
(Year of construction)
Ⓔx II 2 GD
Ex d IIC Gb
Ex e IIC Gb
Ex tb IIIC Db IP66

On the small equipments, the marking can be reduced:

RIBCO-I
RE****** or RE******* or PL**** or NP*** or EM*** or ELF***
(Year of construction)
INERIS 14ATEX0029X
Ⓔx II 2 GD
Ex d/e/tb
IP66

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitutes the technical documentation of the equipment, subject of this certificate.

- Certification File DC-FIT-00 Rev.0 (12 items) signed on 2014.03.10

(17) SPECIAL CONDITIONS FOR SAFE USE

Operating temperature of the fitting units:

-40°C to +100°C with EPDM O-ring;

-60°C to +180°C with silicone O-ring.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is ensured by:

- Conformity to the standards quoted in clause (9).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

TÜV SÜD ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

(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:

TPS 19 ATEX 105708 0001 X Rev. 00

(4) Equipment or Protective System: Stopping plugs - Type: BHL M25, BHL 3/4NPT

(5) Manufacturer: Shenzhen Zhongli Hardware Products Co., Ltd.

(6) Address: Building 1, Hehe Science and technology Park, Daxing Community, Fucheng Street, Longhua District, 518109 Shenzhen, PEOPLE'S REPUBLIC OF CHINA

(7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) TÜV SÜD Product Service GmbH, Notified Body no. 0123, 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 the confidential reports with no. 64.105.19.01091.01

(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 60079-7:2015+A1:2018	**EN 60079-31:2014**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe 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 2GD Ex db IIC Gb Ex eb IIC Gb
Ex tb IIIC Db

Certification Body, München, 13.01.2020

Ing. Kristof De Gersem, MSc.

Certificates without signature shall not be valid. The Certificates may only be circulated in full including its schedule(s). Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail. The document is administrated under the following number: EX5A 105708 0001 Rev. 00

Doc. Name: Temp-ExNBG-TPS-EU-Type-Cert-Rev. 04

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A4 / 07.17

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(13) **Schedule**

(14) **EU-Type Examination Certificate no.**

TPS 19 ATEX 105708 0001 X Rev. 00

Product Service

Certificate History

Revision:	Description:	Report no.:	Issue Date:
Rev. 00	First issue of certificate.	64.105.19.01091.01	13.01.2020

(15) Description of equipment:

The stopping plugs comprise a cylindrical body with an external male thread along its length. BHL M25 has M thread and BHL 3/4NPT has NPT thread. The body material of them are SUS316L. BHL M25 with an "O" ring seal but BHL 3/4NPT without.

The stopping plugs are designed for use in explosive atmospheres classified as Gas Zone 1 and Zone 2 and as Dust Zone 21 and Zone 22.

The M and NPT thread forms are in explosion protection type "d", "e" and "t".

See the instruction manual for further details.

Model designation:

BHL M25, BHL 3/4NPT

Model difference:

Type	Metric	NPT
BHL M25	M25	-
BHL 3/4NPT	-	¾ NPT

Technical data:

Service temperature (Ts)	-60°C≤Ts≤180°C
Degree of protection by enclosure	IP64*, IP66**, IP68**

* IP64 is tested according to EN/IEC 60079-0.
** IPX6 and IPX8 are tested according to EN/IEC 60529; IPX8: 1m, 24h.

Warning label:

N/A

Installation instruction:

See installation instructions provided by the manufacturer and part of this certification.

Certificates without signature shall not be valid. The Certificates may only be circulated in full including its schedule(s). Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail. The document is administrated under the following number: EX5A 105708 0001 Rev. 00

Doc. Name: Temp-ExNBG-TPS-EU-Type-Cert-Rev. 04

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ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

A4 / 07.17

(13) **Schedule**

(14) **EU-Type Examination Certificate no.**

TPS 19 ATEX 105708 0001 X Rev. 00

Product Service

See also (17) Special conditions for safe use.

(16) Test report(s): 64.105.19.01091.01

Routine tests:

N/A

Document List:

File no.:	Description:	Pages:	Rev:	Date:
20191006M-01	BHL M25 drawing	1	A/0	2019-11-25
20191006F-01	BHL 3/4NPT drawing	1	A/0	2019-11-25
BC0601A	BHL M25 Instruction manual	1	00	2019-11-25
BC0601B	BHL 3/4NPT Instruction manual	1	00	2019-11-25

A copy of the full documentation is kept confidentially at TÜV SÜD.

(17) Special conditions for safe use:

1. The equipment shall be installed according to the instruction manual provided by manufacturer.
2. Service temperature: -60°C to 180°C.
3. To maintain the IP64 requirement according to EN/IEC 60079-0, BHL M25 and BHL 3/4NPT shall be made wrench tight. BHL M25 requires at least 5 threads engaged and shall be installed perpendicular to the mounting face and with a groove for sealing ring, ensuring that the sealing ring is evenly compressed against the mounting face. BHL 3/4NPT shall be made up wrench-tight and at least 3 ½ threads engaged.
4. To maintain the flameproof properties, BHL M25 shall be made wrench tight and requires at least 5 threads engaged. BHL 3/4NPT shall be made wrench tight and the threads length engaged shall be not less as the "L2" dimension according ANSI/ASME B1.20.1. When this cannot be realised at the final installation, the stopping plugs cannot be used for "Ex db" applications.

(18) Essential health and safety requirements:

Assured by compliance with standards set out in (9).

Certificates without signature shall not be valid. The Certificates may only be circulated in full including its schedule(s). Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail. The document is administrated under the following number: EX5A 105708 0001 Rev. 00

Doc. Name: Temp-ExNBG-TPS-EU-Type-Cert-Rev. 04

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ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

ITEM	Tag	950-GDZ-03102 : H2 GD FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)	Module	UD	
TASK	code	C10001536	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.**		ARTA-1683			
Manufacturer	Dräger			**Model**		Polytron 8900 UGLD d S 4-20/Hart (ETR 0521)			
Cert No.	PTB 11 ATEX 1005X			**Equipment Ambient Temp.**		-40 °C to 70 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db [ia Ga]	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T4	**IP Rating**	IP65/66/67

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		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	950-GDZ-03102	: H2 GD FZ-03 Electrolyzer PK Area			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001536		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	OK	
	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	950-GDZ-03102	: H2 GD FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001536	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

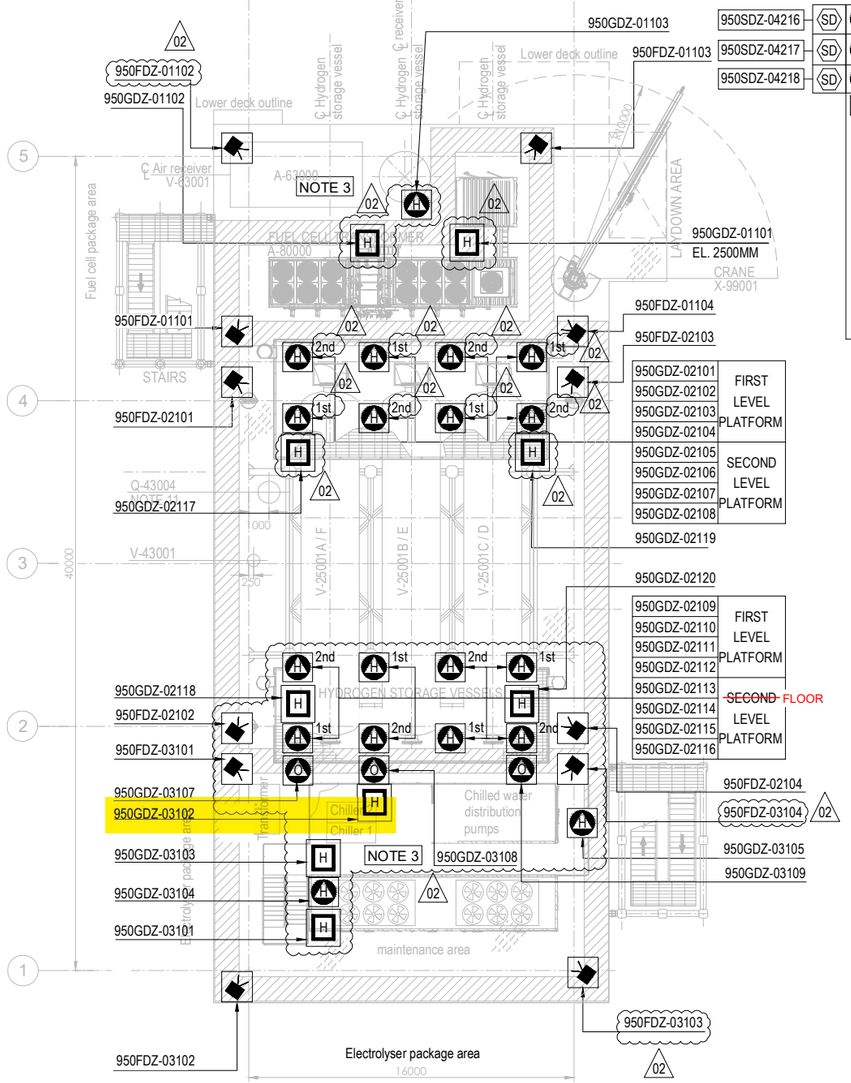
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARIO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-01-14	2025-01-14	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-14T08:46:20.433Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-14T17:24:10.168Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



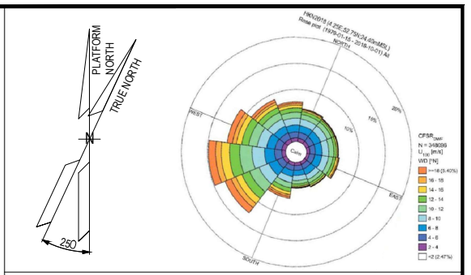
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_E	13/01/25	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

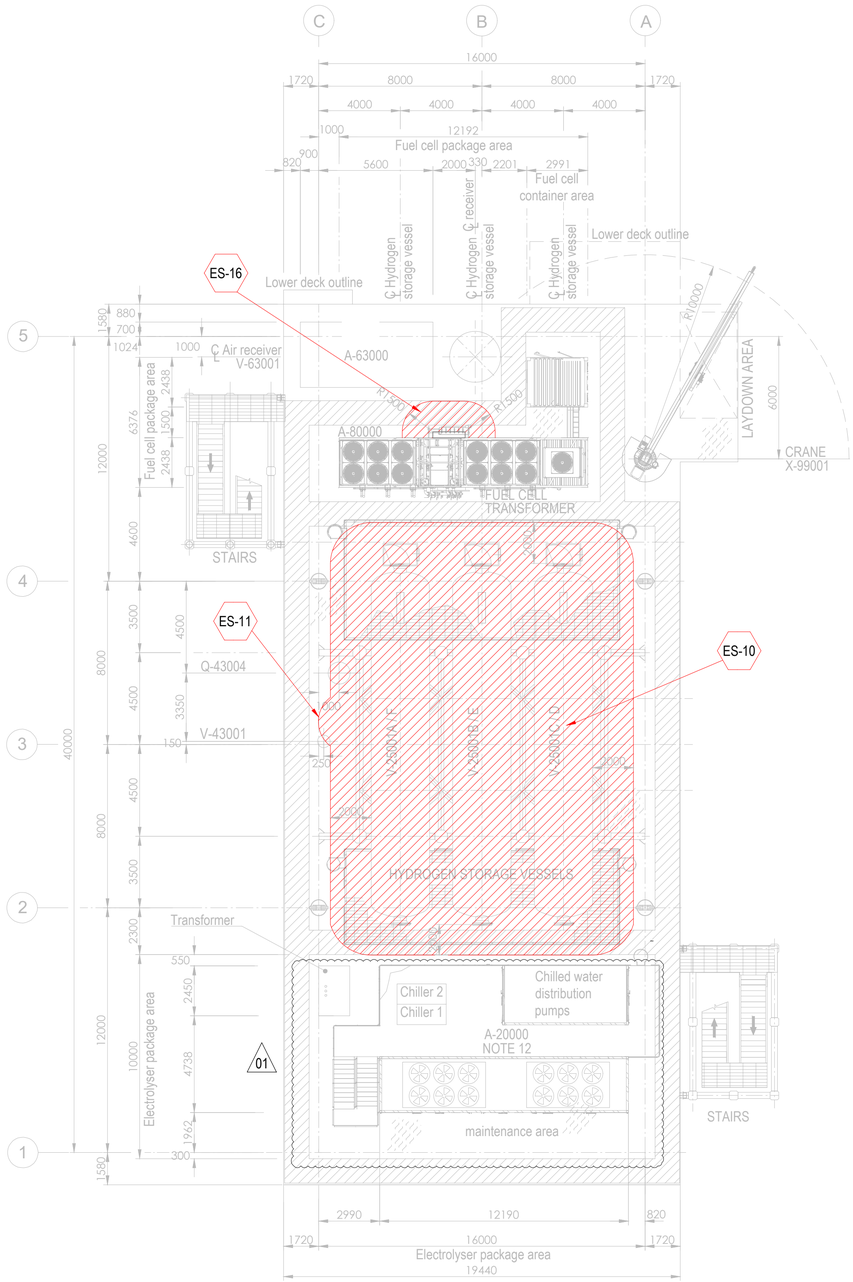
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

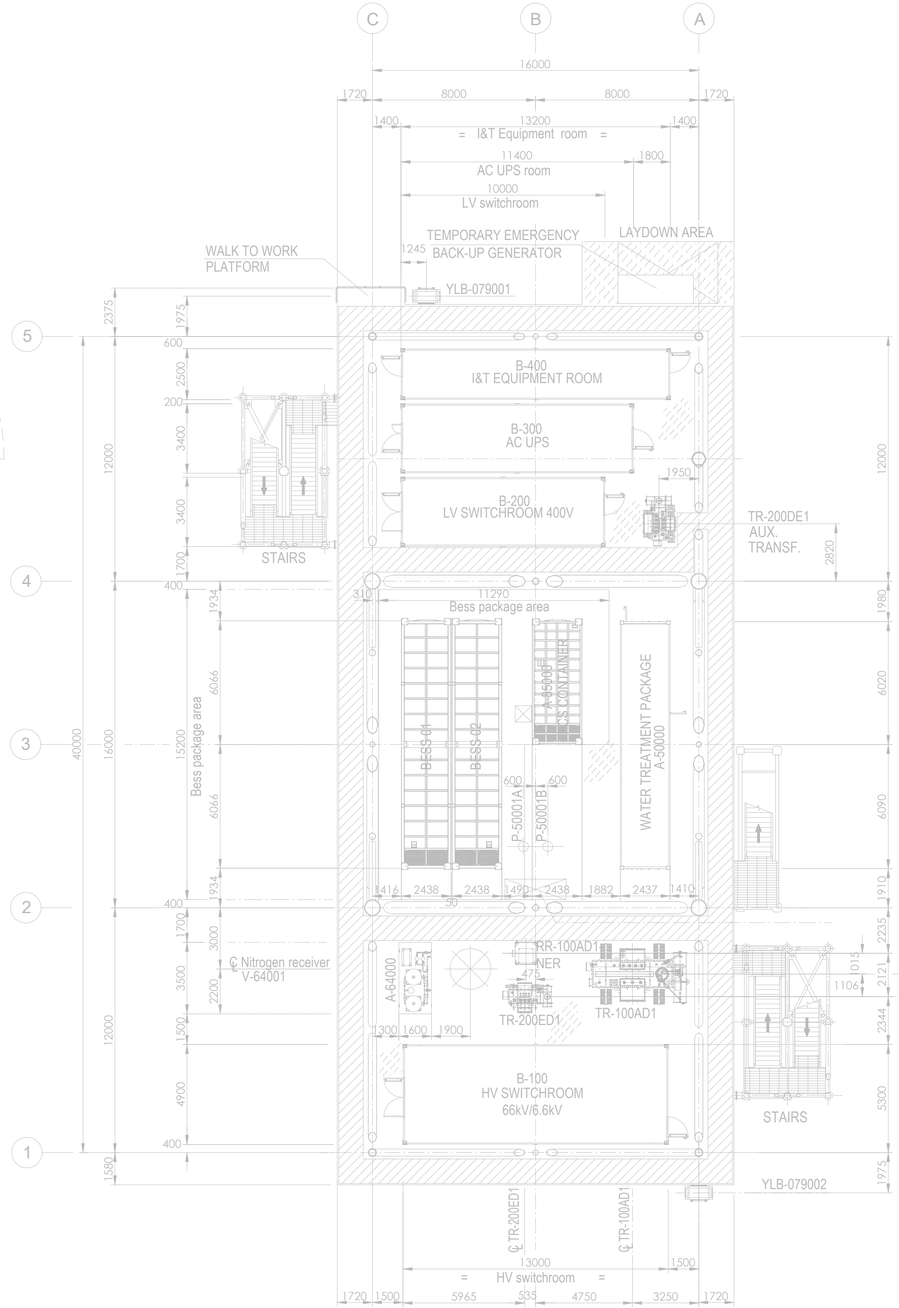
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 01



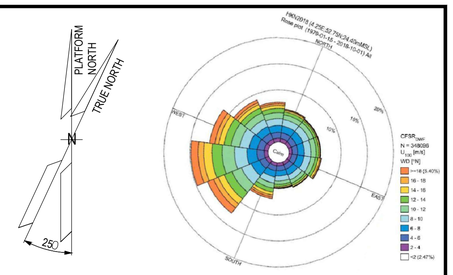
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

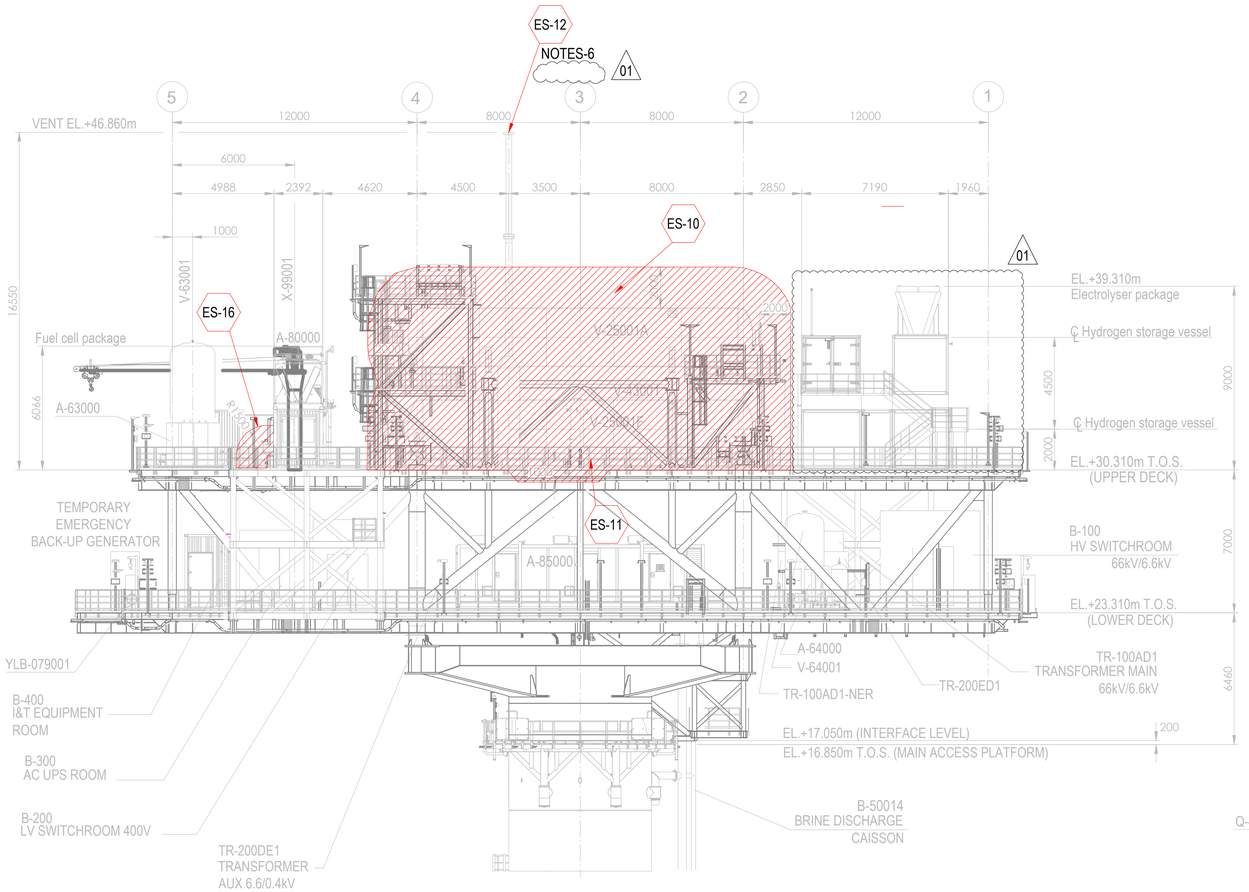
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

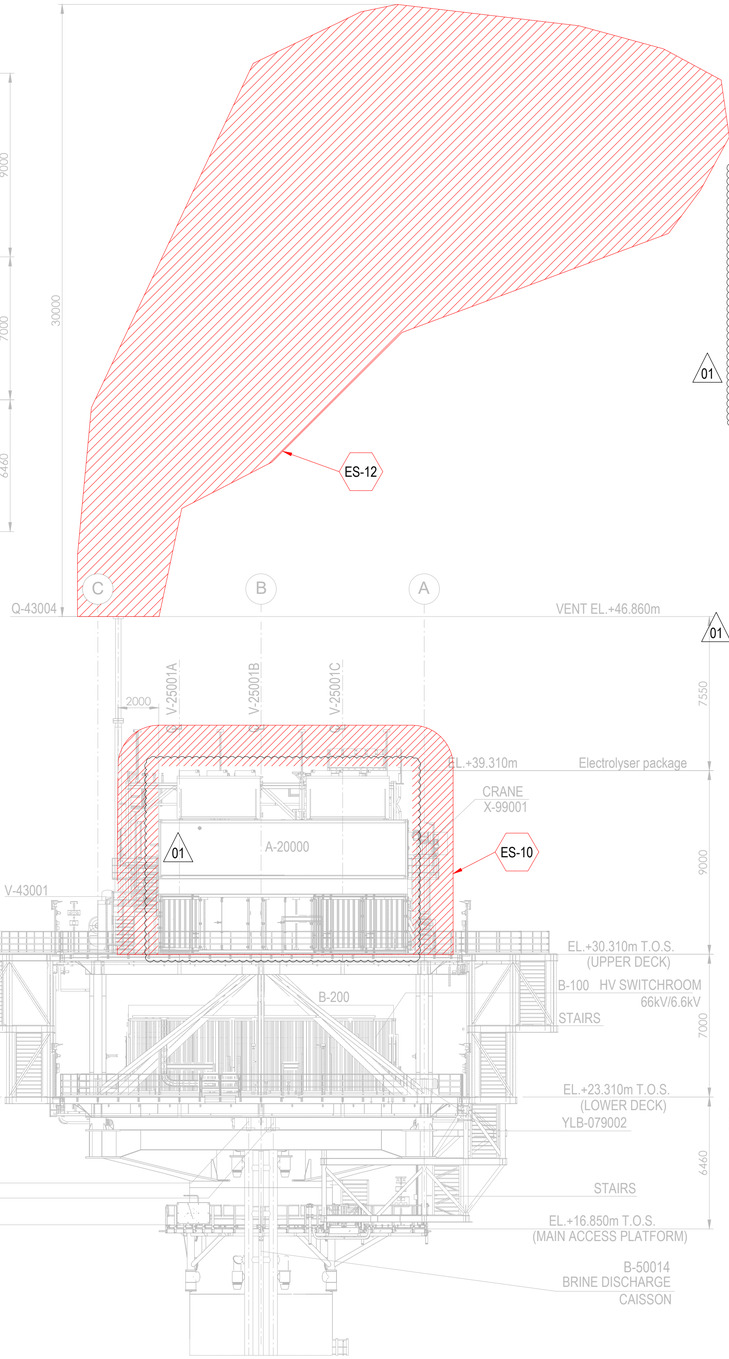
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



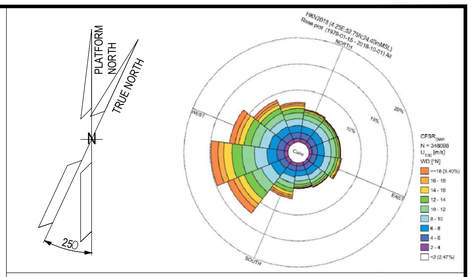
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS		JUNCTION BOX 950-JE-03101			MULTICABLE No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003	
		TB-1				TB-950-JE-03101	
950-GDZ-03101 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 1 RD, WH 2 WH, BK 3 BK	TR1	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TR1 RD 1, WH 2, BK 3	950-GDZ-03101
			SH			Shield Bar	
950-GDZ-03102 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 4 RD, WH 5 WH, BK 6 BK	TR2		TR2 RD 4, WH 5, BK 6	950-GDZ-03102
			SH			Shield Bar	
950-GDZ-03103 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 7 RD, WH 8 WH, BK 9 BK	TR3		TR3 RD 7, WH 8, BK 9	950-GDZ-03103
			SH			Shield Bar	
950-GDZ-03104 PWR+ RD, 4-20mA WH, PWR- BK	**NOTE-2**	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 10 RD, WH 11 WH, BK 12 BK	TR4		TR4 RD 10, WH 11, BK 12	950-GDZ-03104
			SH			Shield Bar	
950-GDZ-03105 PWR+ RD, 4-20mA WH, PWR- BK	**NOTE-2**	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 13 RD, WH 14 WH, BK 15 BK	TR5		TR5 RD 13, WH 14, BK 15	950-GDZ-03105
			SH			Shield Bar	
950-GDZ-03107 PWR+ RD, 4-20mA WH, PWR- BK	**NOTE-2**	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 16 RD, WH 17 WH, BK 18 BK	TR6		TR6 RD 16, WH 17, BK 18	950-GDZ-03107
			SH			Shield Bar	
950-GDZ-03108 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 19 RD, WH 20 WH, BK 21 BK	TR7		TR7 RD 19, WH 20, BK 21	950-GDZ-03108
			SH			Shield Bar	
950-GDZ-03109 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 22 RD, WH 23 WH, BK 24 BK	TR8		TR8 RD 22, WH 23, BK 24	950-GDZ-03109
			SH			Shield Bar	
			25 RD, 26 WH, BK	TR9		TR9 RD 25, WH 26, BK 27	SPARE
			SPARE 27 SH			Shield Bar	
			28 RD, 29 WH, BK	TR10		TR10 RD 28, WH 29, BK 30	SPARE
			SPARE 30 SH			Shield Bar	
			31 RD, 32 WH, BK	TR11		TR11 RD 31, WH 32, BK 33	SPARE
			SPARE 33 SH			Shield Bar	
			34 RD, 35 WH, BK	TR12		TR12 RD 34, WH 35, ~~BK~~ 36	SPARE
			36 SH				
			OS			I.E. Shield Bar	

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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

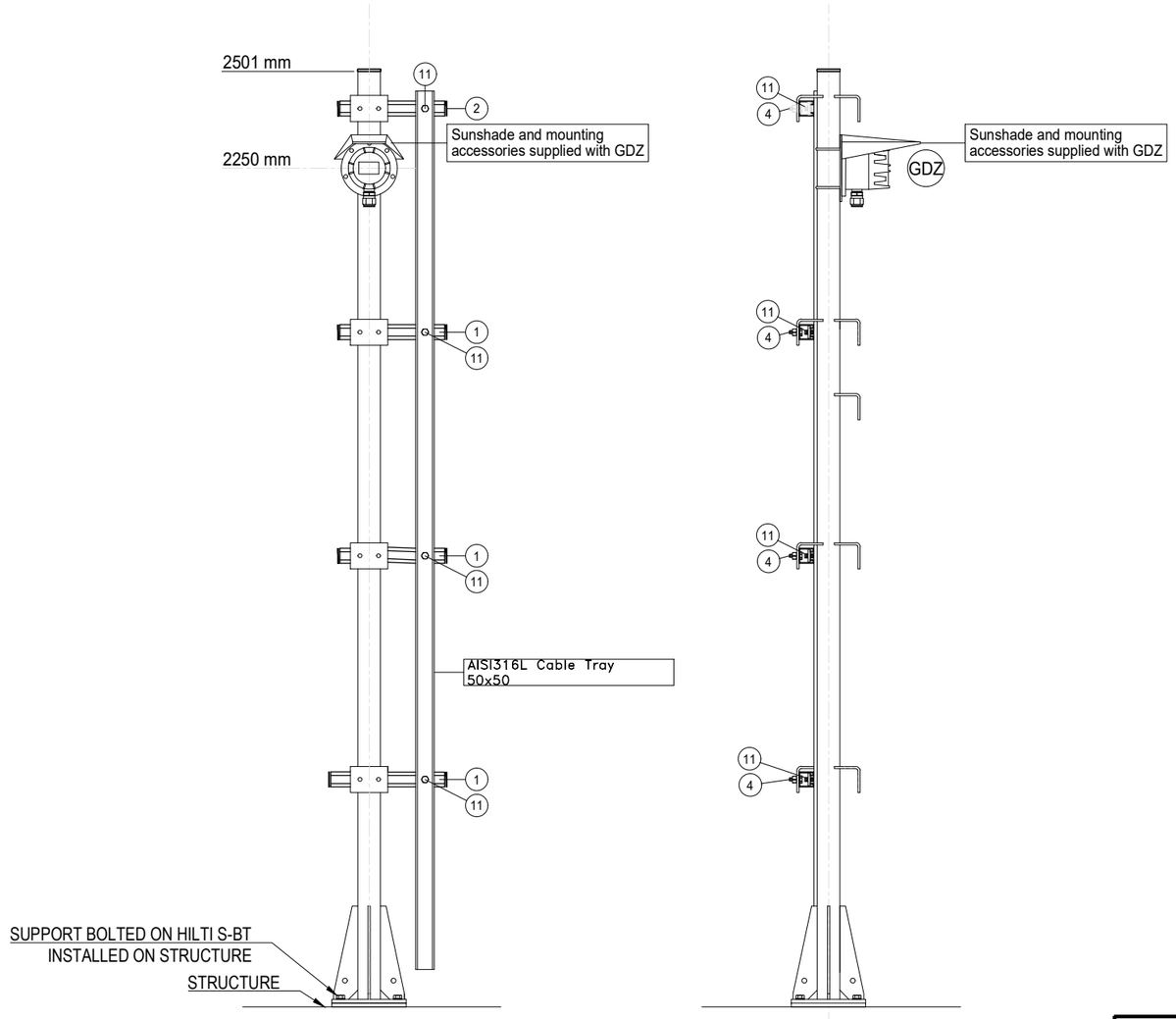
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A3	123A90-DDL-IN-DG-40016	036	01

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

FGS-11

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	2m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	8
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

1

POLE	ITEM	DESCRIPTION	TAGNAME
1	GDZ	O2 GAS DETECTOR - CAT TYPE	950-GDZ-03107
2	GDZ	O2 GAS DETECTOR - CAT TYPE	~~950-GDZ-03108~~ 950-GDZ-03102
3	GDZ	O2 GAS DETECTOR - CAT TYPE	950-GDZ-03109

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

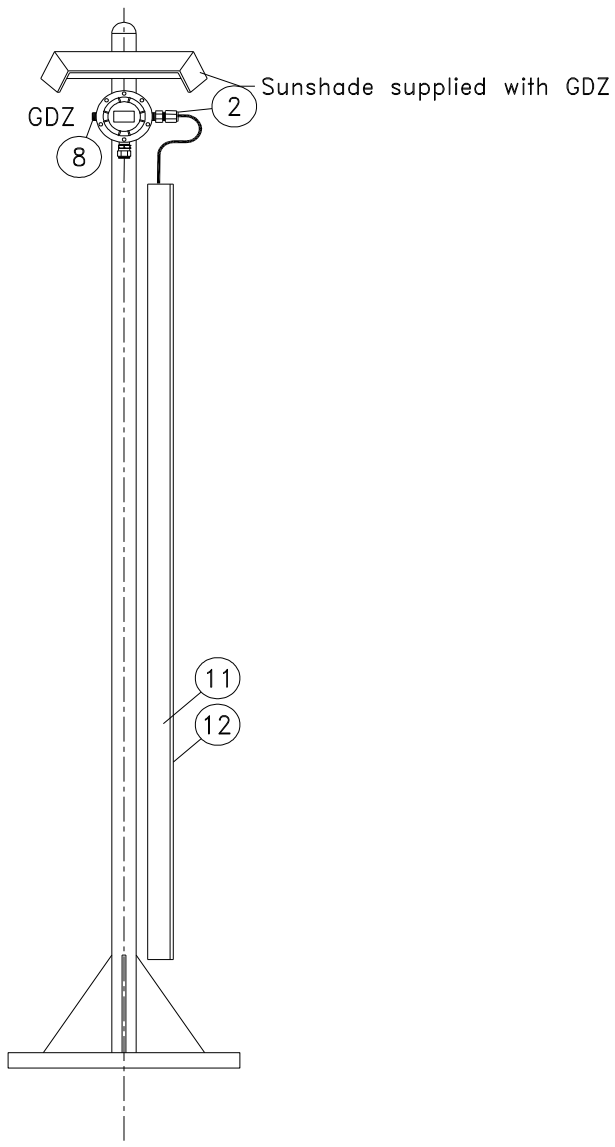
ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 030	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02111
10	950-GDZ-03104
11	950-GDZ-03105
12	950-GDZ-03106
13	950-GDZ-03107
14	~~950-GDZ-03108~~ 950-GDZ-03102
15	950-GDZ-03109
16	950-GDZ-02117
17	950-GDZ-02119
18	950-GDZ-02120
19	950-GDZ-01101
20	950-GDZ-01102
21	950-GDZ-01103
22	950-GDZ-03101
23	950-GDZ-03103

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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

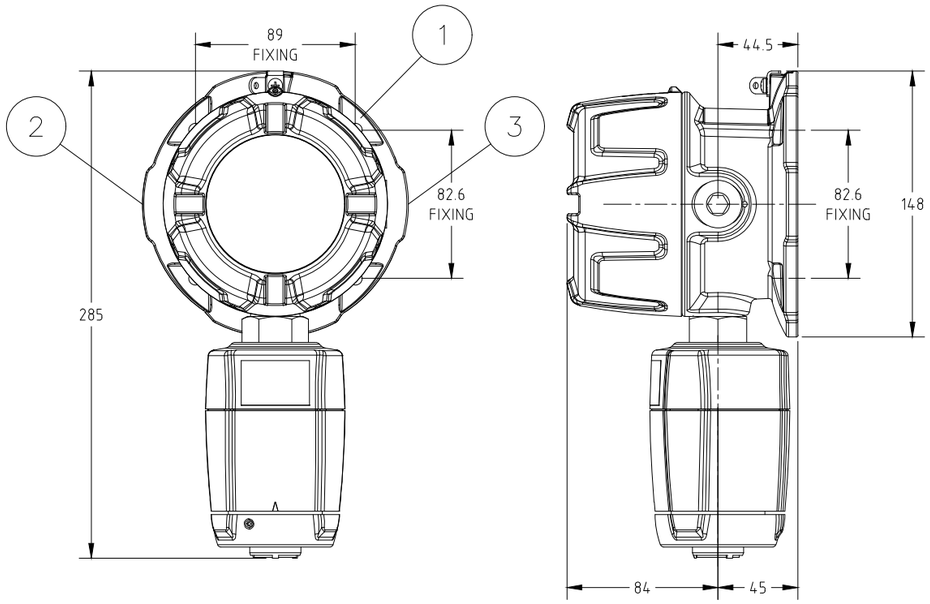
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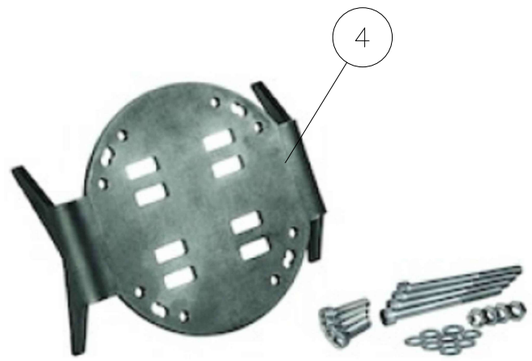
HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING

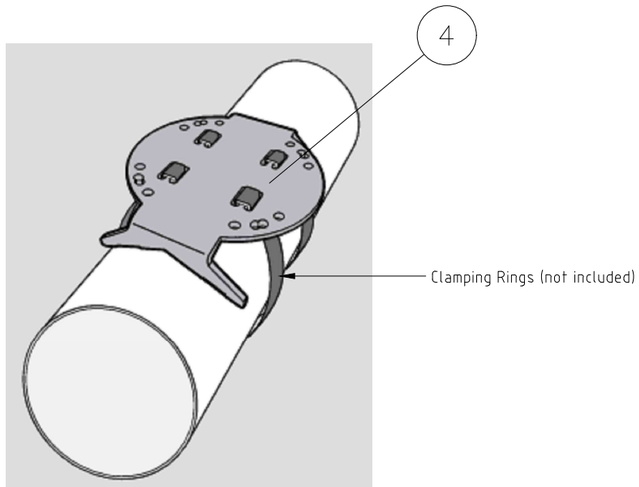
ITEM	DESCRIPTIONS	NR
1	Hydrogen Ultrasonic Leak Detector, DRÄGER Polytron 8900 UGLD d S 4-20/HART Relay	1
2	Reducer 3/4" NPT - M20 Ex d AISI 316	2
3	3/4" plug Ex d AISI 316	1
4	Pipe mount bracket kit Polytron 5000/8000 series, DRÄGER	1
5	Sun and weather protection kit Polytron, DRÄGER	1
6	Stainless Steel Name Plate	1
7		
8		
9		
10		

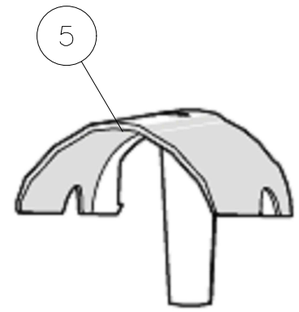
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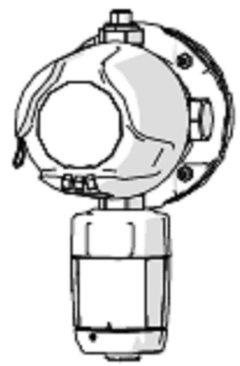
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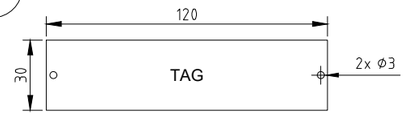






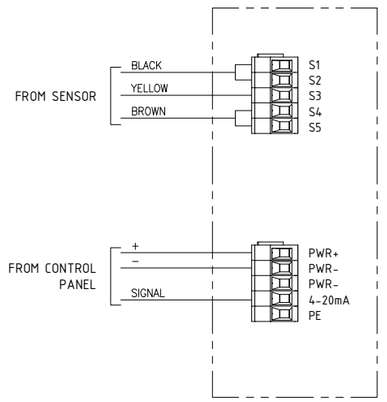
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STAINLESS STEEL
NAME PLATE DETAILS



NOTE 5

WIRING



FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING

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

A3	DRAWING NO.	SHEET	REV.
	1724000821-IN-DA-00003	009	02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-GDZ-01101
2	950-GDZ-01102
3	950-GDZ-02117
4	950-GDZ-02118
5	950-GKDZ-02119
6	950-GDZ-02120
7	950-GDZ-03101
8	950-GDZ-03102
9	950-GDZ-03103

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
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CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3	DRAWING NO.	SHEET	REV.
	1724000821-IN-DA-00003	010	02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN ULTRASONIC LEAK DETECTORS

POS.	TAG NUMBER	SERVICE
1	950-GDZ-01101	H2 GD FZ-01 FUEL CELL PK AREA
2	950-GDZ-01102	H2 GD FZ-01 FUEL CELL PK AREA
3	950-GDZ-02117	H2 GD FZ-02 H2 STORAGE VESSELS AREA
4	950-GDZ-02118	H2 GD FZ-02 H2 STORAGE VESSELS AREA
5	950-GKDZ-02119	H2 GD FZ-02 H2 STORAGE VESSELS AREA
6	950-GDZ-02120	H2 GD FZ-02 H2 STORAGE VESSELS AREA
7	950-GDZ-03101	H2 GD FZ-03 ELECTROLYZER PK AREA
8	950-GDZ-03102	H2 GD FZ-03 ELECTROLYZER PK AREA
9	950-GDZ-03103	H2 GD FZ-03 ELECTROLYZER PK AREA

File: 1724000821-IN-DS-00004-02.xlsx
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Dräger Polytron® 8900 UGLD
Ultrasonic Gas Leak Detector

The Dräger Polytron® 8900 UGLD transmitter is an early warning area monitor for detecting high-pressure gas leaks in outdoor industrial process environments. Thanks to an ultrasonic acoustic sensor, it responds earlier than conventional gas detectors because it registers the sound of leaking gas instead of measuring the concentration of accumulated gas clouds. As gas escapes, leaks are immediately detected in the surrounding area, regardless of the wind direction.



Dräger. Technology for Life®

Benefits

Ultrasonic sensor technology – the early warning system for gas leaks

Typical gas detection systems used to monitor pressurised gas pipes or containers in industrial environments only detect a gas leak if the gas is in the immediate vicinity of the gas sensor. Environmental influences such as wind can delay or prevent a gas cloud from being detected by gas sensors. On the contrary, the Dräger Polytron 8900 UGLD is not affected by environmental factors and detects a high-pressure gas leak as soon as gas escapes. Effective early gas leak warnings can prevent unnecessary shutdowns, saving time and money.

A perfect complement to your gas detection system

The Dräger Polytron 8900 extends the Polytron 8000 series family with acoustic gas leak detection. All transmitters in this series have the same design and an identical user interface. A common user interface ensures that little training or maintenance is required for existing users. The Polytron 8900 UGLD perfectly complements existing flame and gas detection systems with reliable early gas leak warnings.

Delivers results that are easy to understand

For easy interpretation of results, the measured values on the display of the Polytron 8900 UGLD are shown from 0 to 100 percent of the full scale decibel sensitivity range. The ultrasound level is immediately displayed and transmitted without the use of difficult to interpret artificial intelligence. Alarms are configured at a specific level above a predetermined background noise level. Additionally, a time delay of up to 30 seconds can be set in the control system.

Can even detect gas leaks in loud industrial environments

Loud process areas generate noise which is mostly in the audible spectrum. Gas leaks from pressurized vessels above 10 bar generate both audible sound and inaudible ultrasound. Since Polytron 8900 is tuned to measure in the ultrasound spectrum, it can easily identify gas leaks with a leak rate of 100 g/sec in a 65 ft radius circle.

Robust design and fully-sealed sensor

The Polytron 8900 UGLD is an explosion-proof transmitter with a sensor housed in a galvanically-isolated, intrinsically-safe enclosure. The sensor is an ultrasonic microphone that is completely sealed in PVCC, making it impervious to water and dirt. It provides reliable readings without the need for an additional environmental protection baffle. Regular calibration is not necessary, but unlike some other UGLDs on the market, calibration is possible and easy. The expected lifespan of the ultrasonic sensor is more than 10 years.

Technical Data

Dräger Polytron® 8900 UGLD			
Type	Explosion proof / flameproof enclosed transmitter (“d”) or combined with increased safety (“d/e”)		
Gases	Flammable and toxic gases such as hydrogen, methane, ethylene, propane, CO_2, nitrogen and hydrogen sulphide		
Measurement ranges	0-100% equivalent to 55-110 dB; typical alarm setting 10% UGLD signal above background		
Display	Back-lit graphic LCD display; 3 status LEDs (green/yellow/red)		
Sensor Type	PVCC coated piezoelectric microphone with built-in automatic self-test sound generator		
Sensor Performance	Response Time	< 3 sec.	
	Minimum Pressure	> 2 bar (29 psi) Methane	
	Coverage Radius	6.5ft -65 ft depending on gas type, leak rate and background noise	
	Frequency Range	18 kHz - 80 kHz	
Electrical data	Analogue signal output	Normal operation	4 to 20 mA
		Maintenance	Constant 3.4 mA or
			4 mA ±1 mA
			1 Hz modulation; (adjustable)
		Fault	< 1,2 mA
	Digital signal output	HART®	
	Power supply	10 to 30 V DC, 3-wire	
	Power consumption	w/ relay, remote	100 mA at 24 V
	Relay specification	Two alarm relays and one error relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	

Environmental conditions (See sensor data sheet)	Temperature	-40 to 70°C (-40 to 158°F) with relays
	Pressure	700 to 1,300 mbar
	Humidity	0 to 100 % relative humidity
Housing	Transmitter housing	Stainless steel SS316L
	Sensor housing	Polyamide 6
	Housing protection type	NEMA 4X & 7, IP65/66/67
	Cable entry	Three ¾" NPT thread openings or M20 cable gland
	Dimensions (H × W × D)	11.02" x 5.90" x 5.12" inches
	Weight, approx.	11 lbs
Approvals	UL	Class I, Div 1, Groups A, B, C, D; Class I, Zone 1, Group IIC; T-Code T4
	CSA*	Class I, Div 1, Groups A, B, C, D; Class I, Zone 1, Group IIC; T-Code T4
	IECEx	Ex db [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40 / +70 °C Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40/ +70°C; “e” version;
	ATEX	II 2G Ex db [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40 / +70 °C II 2G Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40/+70°C; “e” version
	CE Markings	ATEX (Directive 2014/34/EU) Electromagnetic compatibility (Directive 2014/30/EU) Low voltage (Directive 2014/35/EU)
	Marine approval*	DNV-GL

Technical Data

	SIL 2	Certificate TÜV Süd

* Pending

Ordering Information

Dräger Polytron® 8900 UGLD	Approval code	Part number
Polytron® 8900 UGLD d S 4-20/HART® Relay Stainless Steel Ex d Housing with 4-20mA HART® output and 3 Relays	ETR 0521	83 28 030

Accessories		Part number
Magnetic Wand		45 44 101
Remote Sensing Head with wall mount kit		83 28 021
Connecting cable with plug for the Remote Sensing Head	5 m	83 23 305
	15 m	83 23 315
	30 m	83 23 330
UGLD Calibration and Bump Test Kit w/o Air Cylinder		83 28 042
Zero Air Gas Cylinder 103L for Calibration and Bump Test Kit		45 10 058
Pole Mount Kit		45 44 198
Polysoft Basic (one year license)		83 28 600
Polysoft Basic (Subscription – yearly fee)		83 28 601
IR Connection Kit (requires PolySoft)		45 44 197

HART® is a registered trademark of the HART Communication Foundation.

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
950-GDZ-02111	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1618	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02112	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2192	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02113	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2207	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02114	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2200	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02115	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1615	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02116	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2208	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02117	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1682	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02118	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1676	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02119	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1684	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02120	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1687	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03101	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1688	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03102	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1683	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03103	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1681	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03104	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1624	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03105	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1630	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03107	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4693	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03108	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4680	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03109	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4689	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04201	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1611	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04202	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1625	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04203	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1631	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04204	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTC-2205	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04205	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTC-2202	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04206	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTB-1613	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04207	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1635	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04208	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-0199	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04209	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1633	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04210	FZ-04 H2 detect. in B-300 AC UPS room	LOWER DECK	1724000821	Fores	Dräger	ARTB-1619	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 11 ATEX 1005 X **Issue: 4**

(4) Product: Gas detection transmitters ETR/ITR/XTR/RCU 0***, EAC 01**

(5) Manufacturer: Dräger Safety AG & Co. KGaA

(6) Address: Revalstraße 1, 23560 Lübeck, Germany

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

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the 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 the confidential Test Report PTB Ex 22-21212.

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

EN IEC 60079-0:2018+AC:2020, EN 60079-1:2014+AC:2018,
EN IEC 60079-7:2015+A1:2018, EN 60079-11:2012, EN 60079-31:2014

(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 in accordance to the Directive 2014/34/EU. 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 2 G Ex db IIC T6...T4 Gb	**bzw.**
II 2 G Ex db ia IIC T6...T4 Gb	**bzw.**
II 2 G Ex db eb IIC T6...T4 Gb	**bzw.**
II 2 D Ex tb IIIC T80°C...T130°C Db	**bzw.**
II 2 G Ex db eb ia IIC T6...T4 Gb	**bzw.**

ZSEx001e c

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EU-TYPE EXAMINATION CERTIFICATE

(Translation)

Ex	**II 2 (1) G Ex db [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db ia [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db eb [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db eb ia [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) D Ex tb [ia Da] IIIC T135°C Db**	

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, December 14, 2022
On behalf of PTB:

Dr.-Ing. M. Thedens
Regierungsdirektor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 24

ZSEx001e c

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 11 ATEX 1005 X, Issue: 4**

(15) Description of Product

The Gas detection transmitters ETR/ITR/XTR/RCU 0***, EAC 01** consist of three different types of sensor and interfaces. The Gas detection transmitter type ETR 0*** uses the electrochemical sensing principle or an ultrasonic sensor with an electrochemical sensor interface, the Gas detection transmitter type ITR 0*** uses the infrared sensing principle and the Gas detection transmitter type XTR 0*** uses the catalytic sensing principle or infrared sensing principle with a catalytic sensor interface. The Gas detection transmitter type RCU 0*** shall only be used with separate certified sensors. The sensor frontend (EC sensing head) of the ETR 0*** series comprises a galvanically separating barrier circuit (inside the flameproof enclosure) and intrinsically safe electronics located out-side the flameproof enclosure as well as an electro-chemical sensor or ultrasonic sensor - all of them being covered by this certificate. The sensors of the ITR 0*** and XTR 0*** series are covered by separate certifications, which are accepted under this certificate.

The internal electronic covers the intrinsically safe fieldbus under consideration of the maximum FISCO input ratings applicable for the operation as both FISCO Field device or alternatively non-intrinsically safe fieldbus PA/FF.

Type code:

***TR 0** * * *
1 2 3 4

1: Sensing principle / sensors
- E = electrochemical
- I = infrared
- X = catalytic

2: Series and enclosure material
- 2 = 02/03 series, aluminium enclosure
- 3 = 02/03 series, stainless steel enclosure
- 4 = 04/05 series, aluminium enclosure
- 5 = 04/05 series, stainless steel enclosure

3: Sensors

ITR 0 * * *

3: Sensors
- 0 = IDS 0001
- 1 = IDS 0101

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2 = IDS 0102
5 = IDS 0105

ETR 0 * * *
3: Sensors
0 = DrägerSensor or DrägerSensor XS with adapter *or DrägerSensor with Gas Generator type EDS 03***
2 = Ultraschall Sensor

XTR 0 * * *
3: Sensors
0 = IDS 0002
1 = XDS 020*
2 = Ex-Sensor LC NPT

4: Interface

0	=	"d", 4-20 mA
1	=	"d", 4-20 mA with Relay
2	=	"d", Modbus RTU
A	=	"d"+"ia", Foundation Fieldbus
B	=	"d"+"ia", Foundation Fieldbus SIF
E	=	"d"+"ia", Profibus
F	=	"d"+"ia", Profisafe
I	=	"d"+"e", 4-20 mA
J	=	"d"+"e", 4-20 mA with Relay
K	=	"d"+"e", Modbus RTU
S	=	"d"+"e"+"ia", Foundation Fieldbus
T	=	"d"+"e"+"ia", Foundation Fieldbus SIF
W	=	"d"+"e"+"ia", Profibus
X	=	"d"+"e"+"ia", Profisafe

Type code for Junction Box, type EAC 01 (Remote Sensor)**

EAC 01 * *
1 2

1: Enclosure Material
0 = Aluminum
1 = Stainless Steel
2: Features not relevant for the type of protection

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

Type code for Remote Box, type RCU 0*

RCU 0 * * *
1 2 3

1: Enclosure Material
2 = Aluminum
3 = Stainless Steel
2: Features not relevant for the types of protection

3: Interface

0	=	"d", 4-20 mA
1	=	"d", 4-20 mA with Relay
2	=	“d”, Modbus RTU
A	=	"d"+"ia", Foundation Fieldbus
B	=	"d"+"ia", Foundation Fieldbus SIF
E	=	"d"+"ia", Profibus
F	=	"d"+"ia", Profisafe
I	=	"d"+"e", 4-20 mA
J	=	"d"+"e", 4-20 mA with Relay
K	=	"d"+"e", Modbus RTU
S	=	"d"+"e"+"ia", Foundation Fieldbus
T	=	"d"+"e"+"ia", Foundation Fieldbus SIF
W	=	"d"+"e"+"ia", Profibus
X	=	"d"+"e"+"ia", Profisafe

The relation between ambient temperature and the assigned temperature class is as follows:

Type	Ambient temperature range	Temperature class (Gas)	Temperature class (dust)
ITR 0*0* RCU 0*** XTR 0*0*	-40 °C to +65 °C	T4	T130°C
All other versions	-40 °C to +80 °C	T4	T130°C
All versions	-40 °C to +40 °C	T6	T80°C
ETR 02/032* ETR 04/052*	-40 °C to +70 °C	T4	T135°C
ETR 02/030* ETR 04/050*	-40 °C to +70 °C	T4	T135°C
ETR 02/030* ETR 04/050*	-40 °C to +40 °C	T6	T135°C

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

Electrical Ratings:

Maximum supply wattage: P_{max}: 5 W

Supply:

ETR 02/03** series	10...30 VDC, 0.08...0.15 A
ITR 02/03** series	10...30 VDC, 0.1...0.75 A
XTR 02/03** series	10...30 VDC, 0.1...0.2 A
ETR 04/05** series	10...30 VDC, 0.1...0.35 A
ITR 04/05** series	10...30 VDC, 0.3...1.0 A
RCU 02/03** series	10...30 VDC, 0.3...1.0 A
XTR 04/05** series	10...30 VDC, 0.15...0.45 A
Relay	5A, 30 VDC or 230 VAC

Fieldbus circuit:
Field device as Fieldbus system in type of protection Intrinsic Safety Ex ia IIC; FISCO in acc. of IEC 60079-11, using only for the interface type A; B; E; F; S; T; W and X
or
Field device as Fieldbus system (non-intrinsically safe) using only for the interface type 2 and K
Electrical data: Maximum values:

Model	Voltage, Ui [VDC]	Current, Ii [mA]	Power, Pi [mW]
ETR 04*(*) ETR 05*(*) ITR 04*(*) ITR 05*(*) RCU 02*(*) RCU 03*(*) XTR 04*(*) XTR 05*(*)	17.5	380	5320

For the Gas detection transmitters series ETR ****
Sensor circuit: in type of protection Intrinsic safety Ex ia IIC / IIIC;
only for connecting Dräger Sensor or XS with adapter or
ultrasonic sensor or DraegerSensor with electrochemical sensor
type EDS 03**

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

(16) Test Report PTB Ex22-21212

(17) Specific conditions of use

The circuits are limited to overvoltage category I/II/III (non mains/mains circuits) as defined in IEC 60664-1 for FISCO field device operation.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. M. Thedens
Regierungsdirektor

Braunschweig, December 14, 2022

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ITEM	Tag	950-GDZ-03107 : O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)	Module	UD	
TASK	code	C10001540	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.**		ARTA-4693			
Manufacturer	Dräger			**Model**		Polytron 8100 EC d S 4-20/Hart (ETR 0500)			
Cert No.	PTB 11 ATEX 1005X			**Equipment Ambient Temp.**		-40 °C to 40 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db [ia Ga]	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP65/66/67

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		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	NA	
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	950-GDZ-03107	: O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10001540	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		PL	
	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	Note	See PL C30002329, C30002330
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	OK	
	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	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	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	950-GDZ-03107	: O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10001540	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

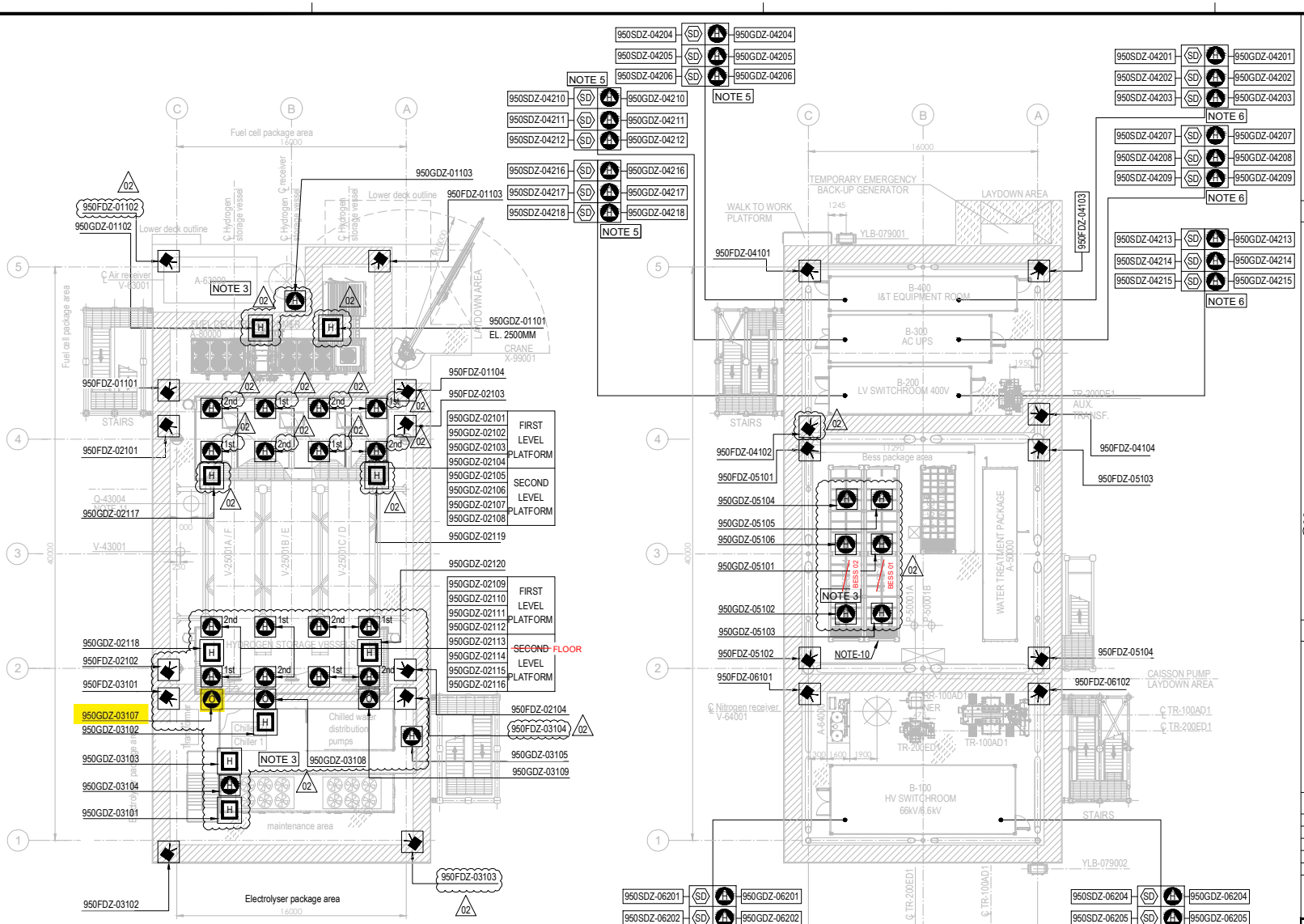
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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	Francesco Zucca	Luca Mussi	
Date	2024-12-30	2025-01-07	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-30T14:54:44.570Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-07T16:16:29.145Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

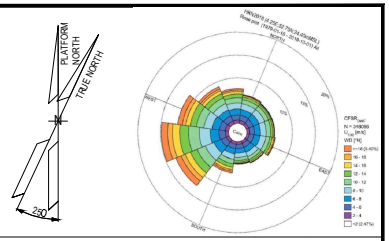
REV. 02



EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 95OGDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

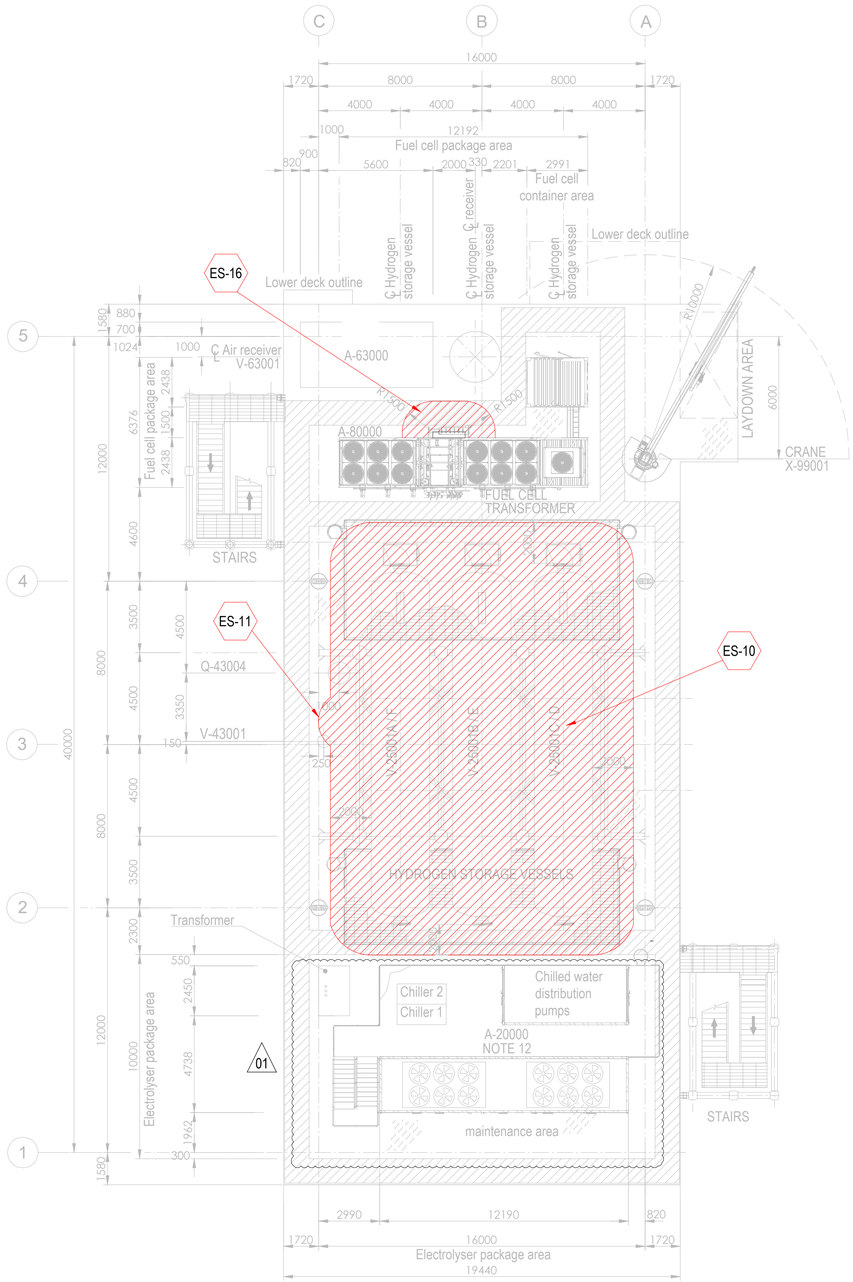
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

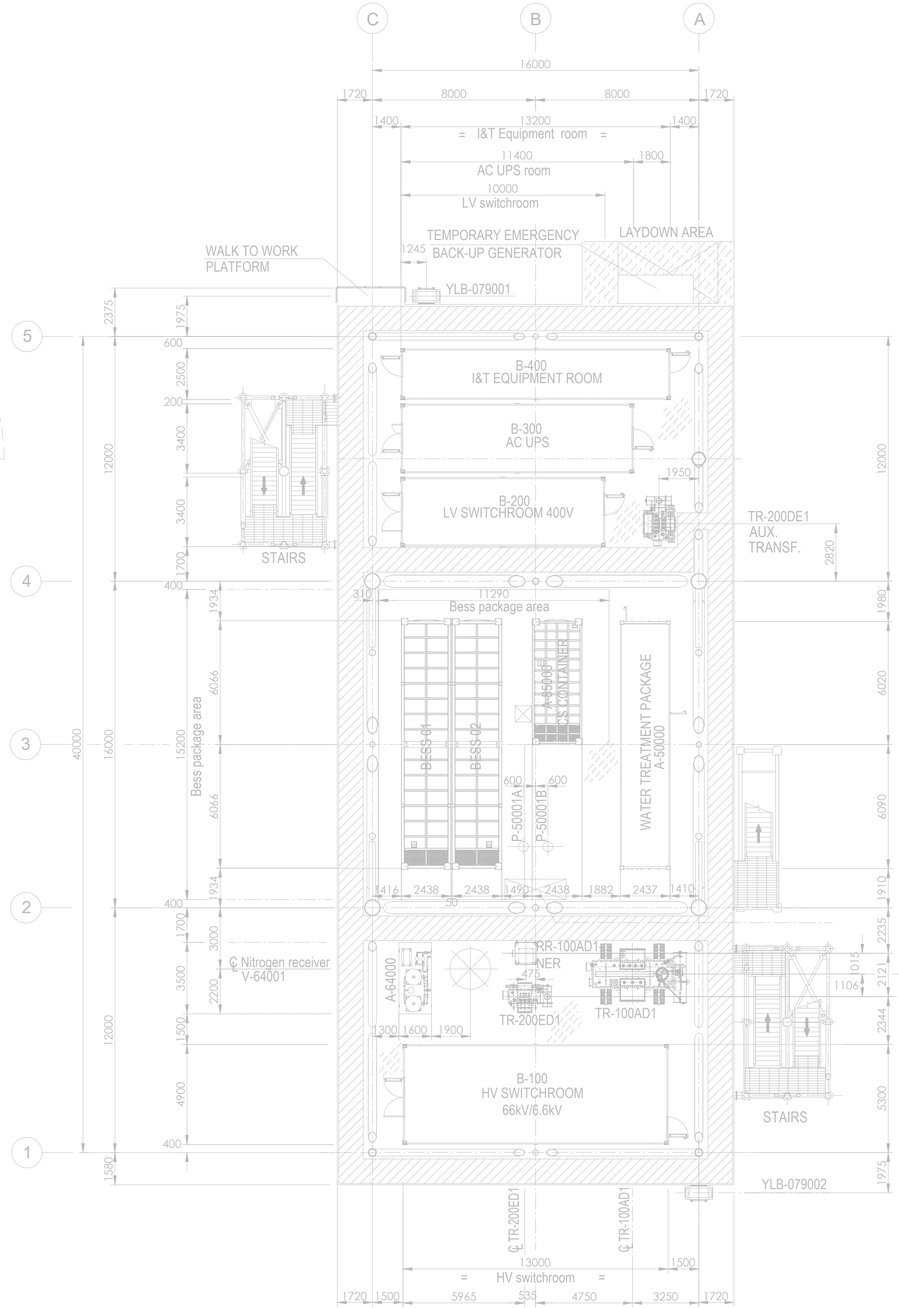
File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01



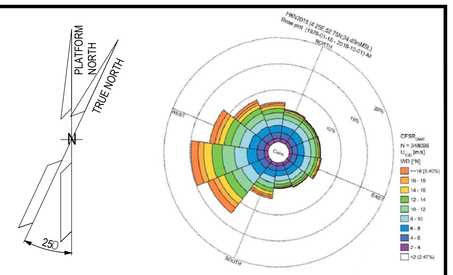
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

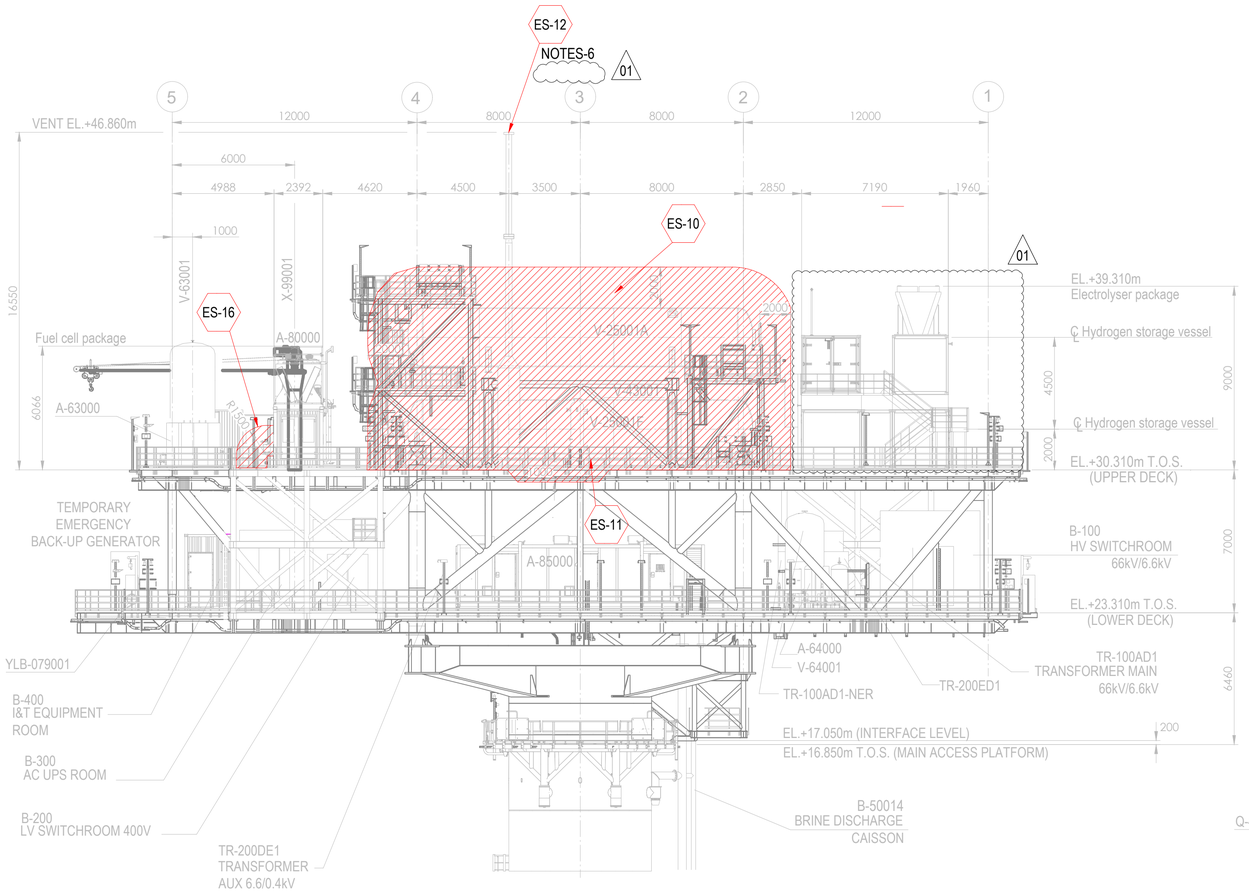
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

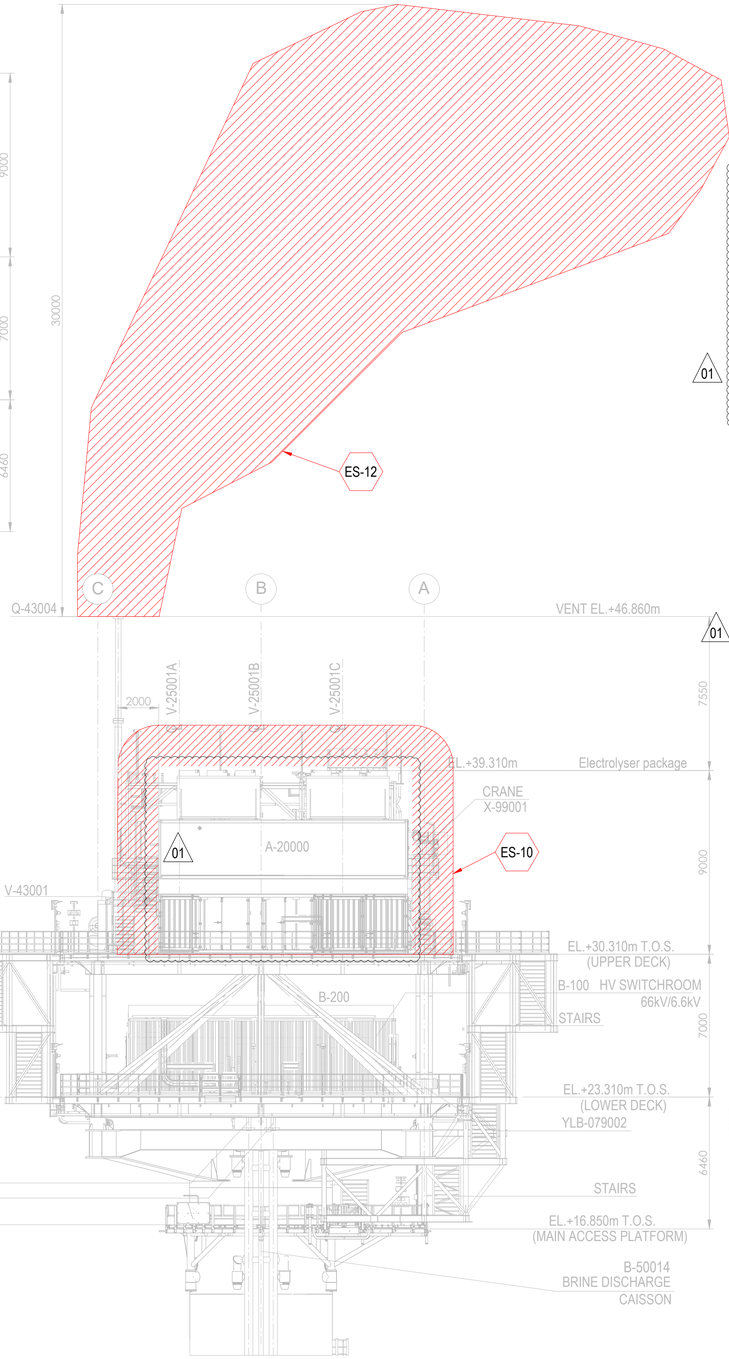
File Name : 123A90-DDL-SAF-DL-30022 Rev.01

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

REV. 01



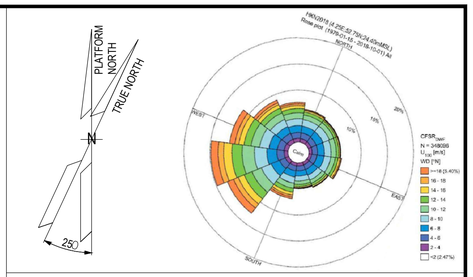
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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

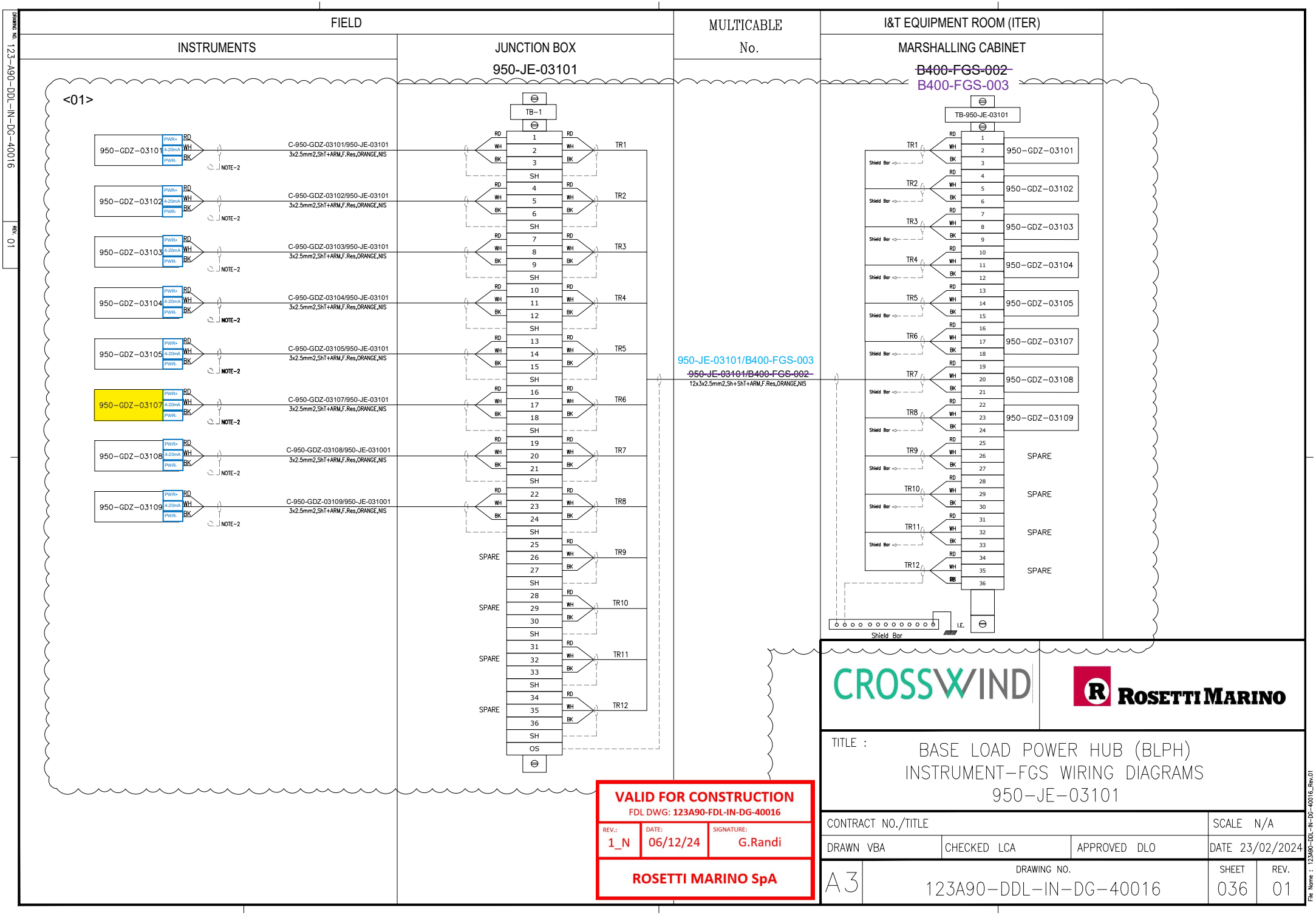
TITLE :
BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
ELEVATION LOOKING NORTH & EAST

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. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03101

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 036	REV. 01

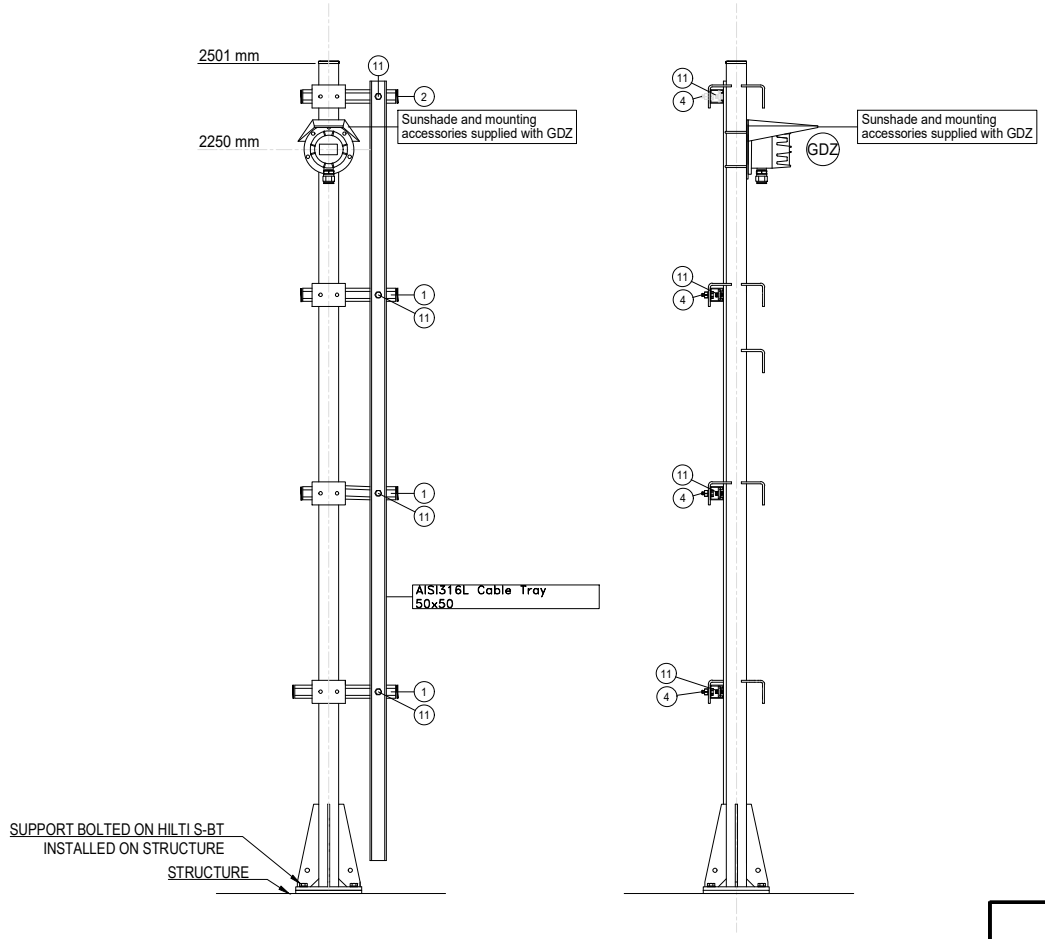
File Name : 123A90-DDL-IN-DG-40016_Rev.01

FGS-11

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00

POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	2m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	8
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4



1

POLE	ITEM	DESCRIPTION	TAGNAME
1	GDZ	O2 GAS DETECTOR - CAT TYPE	950-GDZ-03107
2	GDZ	O2 GAS DETECTOR - CAT TYPE	~~950-GDZ-03108~~ 950-GDZ-03102
3	GDZ	O2 GAS DETECTOR - CAT TYPE	950-GDZ-03109

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

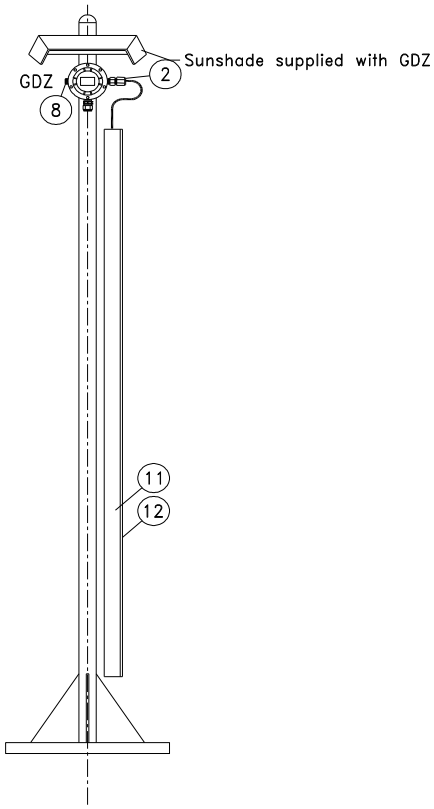
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 030	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02111
10	950-GDZ-03104
11	950-GDZ-03105
12	950-GDZ-03106
13	950-GDZ-03107
14	~~950-GDZ-03108~~ 950-GDZ-03102
15	950-GDZ-03109
16	950-GDZ-02117
17	950-GDZ-02119
18	950-GDZ-02120
19	950-GDZ-01101
20	950-GDZ-01102
21	950-GDZ-01103
22	950-GDZ-03101
23	950-GDZ-03103

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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

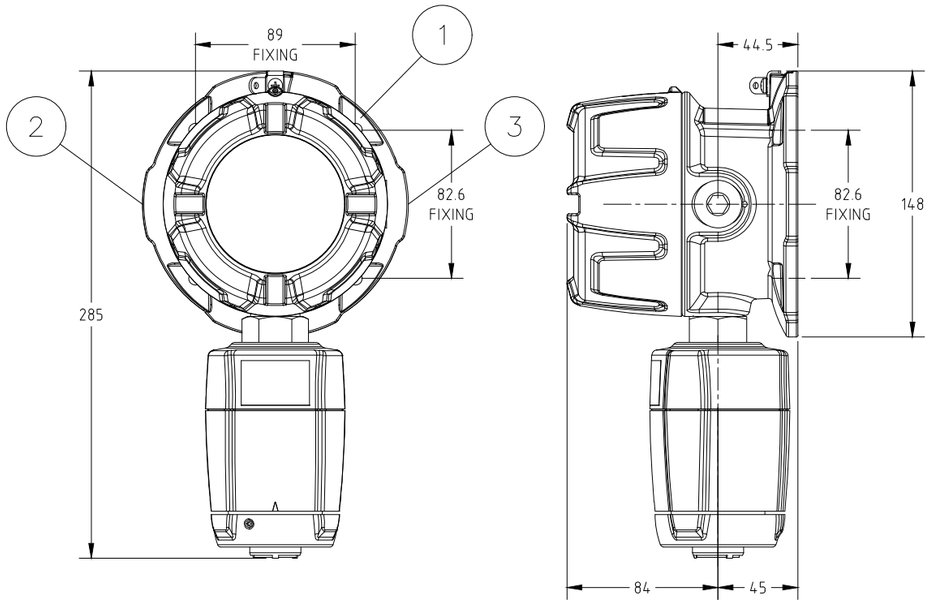
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

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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OXYGEN POINT DETECTOR / PIPE MOUNTING



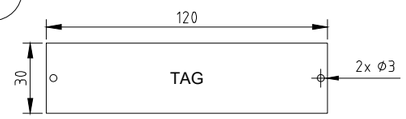
ITEM	DESCRIPTIONS	NR
1	Oxygen Point Detector, DRÄGER Polytron 8100 EC d S 4-20/HART	1
2	Reducer 3/4" NPT - M20 Ex d AISI 316	2
3	3/4" plug Ex d AISI 316	1
4	Pipe mount bracket kit Polytron 5000/8000 series, DRÄGER	1
5	Sun and weather protection kit Polytron, DRÄGER	1
6	Stainless Steel Name Plate	1
7		
8		
9		
10		

INSTALLATION
QUANTITY

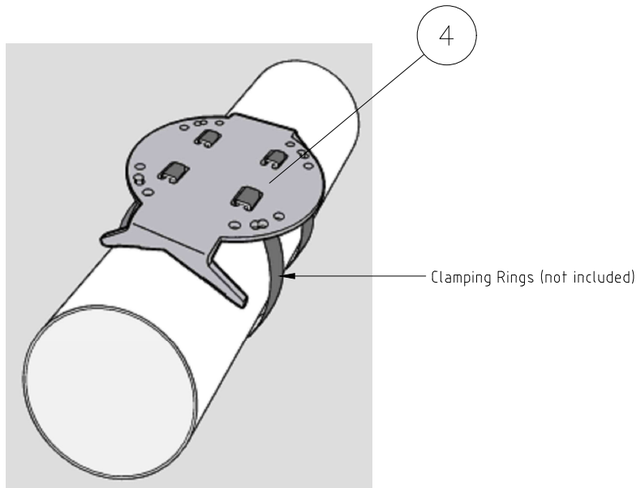
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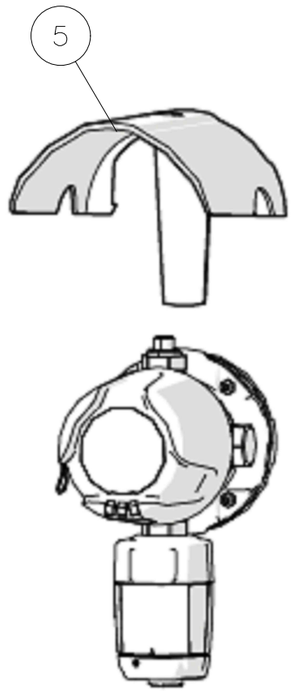
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STAINLESS STEEL
NAME PLATE DETAILS

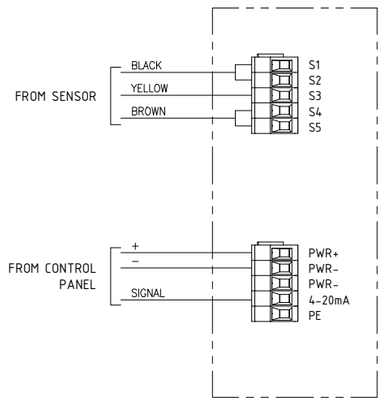


NOTE 5





WIRING



FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
OXYGEN POINT DETECTOR / PIPE MOUNTING

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 011 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

OXYGEN POINT DETECTOR / PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-GDZ-03107
2	950-GDZ-03108
3	950-GDZ-03109

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
OXYGEN POINT DETECTOR / PIPE MOUNTING – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 012

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

OXYGEN POINT DETECTORS

POS.	TAG NUMBER	SERVICE
1	950-GDZ-03107	O2 DET. FZ-03 ELECTROLYZER PK AREA
2	950-GDZ-03108	O2 DET. FZ-03 ELECTROLYZER PK AREA
3	950-GDZ-03109	O2 DET. FZ-03 ELECTROLYZER PK AREA

File: 1724000821-IN-DS-00004-02.xlsx
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Dräger Polytron® 8100 EC
Detector for toxic gases and oxygen

The Polytron® 8100 EC is Dräger's top of the line explosion-proof transmitter for the detection of toxic gases or oxygen. It uses a high performance plug and play electrochemical DrägerSensor to detect a specific gas. Besides having a 3-wire 4 to 20 mA analog output with relays, it also offers HART®, Modbus and Fieldbus protocol, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Durable, intelligent and sensitive – the DrägerSensor®

With unique electrochemical DrägerSensors, Polytron 8100 can detect over 100 toxic gases and oxygen. These long life sensors provide continuous detection even under the harshest conditions. DrägerSensors offer the industry's widest temperature and humidity range between -40 °C to +65 °C (-40 °F to +150 °F). The built-in memory contains all calibration and configuration information: therefore the sensor ships pre calibrated and is ready for immediate operation. An intelligent sensor self-test function allows for predictive maintenance. The intrinsically safe connection of the sensor eliminates the need for a flame arrestor, giving you faster response times and higher sensitivity.

Easy device management via digital communication

The Dräger Polytron 8100 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces with PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8100 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information. The Polytron 8100 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8100 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8100 features a Class I, Div. 1 rated explosion proof enclosure made from epoxy coated aluminium or 316L stainless steel, making it suitable for a wide range of environmental conditions.

Remote sensor option does not require conduit

The remote sensor enclosure allows you to install the sensor separately from the transmitter. This 'external' installation makes it easier to use if the sensor has to be installed in a difficult to access or unfavorable position.

Technical Data

Dräger Polytron® 8100 EC			
Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Toxic gases and oxygen, dependent on the sensor used		
Measuring ranges	Customized adjustment, see sensor data sheet		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	see sensor datasheet		
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	w/o relay, non-remote	80 mA at 24 V
		w/ relay, remote	100 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 65 °C (-40 to 149 °F) without relay	
		-40 to 65 °C (-40 to 149 °F) with relay	
	Pressure	20.7 to 38.4 inch Hg / 700 to 1,300 mbar	
	Humidity	0 to 100 % r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Polyamide	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D), approx.		11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm
	Weight, approx.	Aluminium	6.6 lbs / 3.0 kg
		SS316 L	11.0 lbs / 5.0 kg
Approvals	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	FM Performance (H_2S sensor)	Certificate No: FM16NUS0015	
		FM 6340:2014, FM Class 3810:2005,	
		ISA–92.00.01-2010	
	CE marking	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Marine approvals	DNV GL, ABS, LR, CSS, RMRS	
	MED approval	Certificate no. MEDB0000411	
	DEKRA Performance approval (for O_2 sensors only)	Certificate no. BVS 13 ATEX G 001 X	
		EN 60079-29-16:2016	
	SIL 2 certified by TUEV Sued	Certificate no. Z10 053474 0023	

Ordering Information

Dräger Polytron® 8100 EC	Approval Code	Order Number
Dräger Polytron® 8100 EC d A 4-20/HART®	ETR 0400	83 44 403
Dräger Polytron® 8100 EC d A 4-20/HART® relay	ETR 0401	83 44 404
Dräger Polytron® 8100 EC d S 4-20/HART®	ETR 0500	83 44 412
Dräger Polytron® 8100 EC d S 4-20/HART® relay	ETR 0501	83 44 413
Dräger Polytron® 8xx0 Custom Configuration, e.g. Modbus – visit www.draeger.com/polytron to configure yours		83 44 800

Electrochemical DrägerSensors	Order Number
DrägerSensor® AC	68 10 595
Initial Operation Set for DrägerSensor AC	68 09 381
DrägerSensor® Cl_2	68 09 665
DrägerSensor® $COCl_2$	68 09 930
DrägerSensor® CO	68 09 605
DrägerSensor® CO LS	68 09 620
DrägerSensor® CO LH	68 12 570
DrägerSensor® H_2	68 09 685
DrägerSensor® H_2O_2 HC	68 09 675
DrägerSensor® H_2O_2 LC	68 09 705
DrägerSensor® H_2S LC	68 09 610
DrägerSensor® H_2S HC	68 09 710
DrägerSensor® H_2S	68 10 435
DrägerSensor® HCl	68 09 640
DrägerSensor® HCN	68 09 650
DrägerSensor® HCN LC	68 13 200
DrägerSensor® Hydrides	68 09 635
DrägerSensor® Hydrides SC	68 09 980
DrägerSensor® PH_3/AsH_3	68 09 695
DrägerSensor® Hydrazine	68 10 180
DrägerSensor® NH_3 LC	68 09 680
DrägerSensor® NH_3 HC	68 09 645
DrägerSensor® NH_3 TL	68 13 095
DrägerSensor® NH_3 FL	68 13 260
DrägerSensor® NO LC	68 09 625
DrägerSensor® NO_2	68 09 655
DrägerSensor® NO_2 LC	68 13 205
DrägerSensor® O_3	68 14 005
DrägerSensor® O_2 LS	68 09 630
DrägerSensor® OV1	68 10 740
DrägerSensor® OV2	68 10 745
DrägerSensor® SO_2	68 09 660

Accessories	Order Number
Magnetic wand	45 44 101
Sensor Test Dongle	83 17 619
Diagnostic Dongle	83 17 860
Pipe mount bracket	45 44 198
Duct mount kit	68 12 725
Duct mount adapter for remote EC sensing head	83 17 617
Remote adapter RS stainless steel	83 23 404

Ordering Information

IR Connection Kit Polytron® 5000/8000			45 44 197
PolySoft licence (1 year)			83 28 639
PolySoft licence (subscription)			83 28 640
EC Sensing Head Remote w/ mount kit			68 12 684
Connection cable w/ plug for		16 ft / 5 m	83 23 305
Remote EC Sensing Head		49 ft / 15 m	83 23 315
		98 ft / 30 m	83 23 330
Splash guard			68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx			37 02 198
Calibration adapter FKM Viton®			68 10 536
Gassing adapter		PE incl. tubing	45 09 314
Dust filter (not for Cl_2, HCl, H_2O_2, O_3, N_2H_4)			68 09 595
Dust filter (SO_2)			68 12 224
Selective filter A2F (CO, CO LS, H_2)			68 09 684
Selective filter K2F ($COCl_2$)			68 09 933
Selective filter NF (HCl)			68 09 643
Selective filter HSF (Hydrides)			68 09 862
Selective filter D3F (CO)			68 12 435
Selective filter MF (PH_3, AsH_3)			68 09 638
Selective filter K1F (SO_2)			68 09 663

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Viton® is a registered trademark of the DuPont company.

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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
950-GDZ-02111	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1618	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02112	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2192	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02113	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2207	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02114	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2200	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02115	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1615	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02116	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2208	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02117	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1682	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02118	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1676	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02119	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1684	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02120	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1687	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03101	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1688	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03102	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1683	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03103	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1681	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03104	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1624	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03105	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1630	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03107	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4693	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03108	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4680	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03109	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4689	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04201	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1611	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04202	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1625	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04203	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1631	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04204	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTC-2205	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04205	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTC-2202	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04206	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTB-1613	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04207	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1635	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04208	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-0199	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04209	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1633	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04210	FZ-04 H2 detect. in B-300 AC UPS room	LOWER DECK	1724000821	Fores	Dräger	ARTB-1619	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	

Translation

1 EU-Type Examination Certificate Supplement 08

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

2 **Device with a measuring function for explosion protection Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 13 ATEX G 001 X**

4 Product: **Transmitters types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052*, ETR 040*, ETR 050***

5 Manufacturer: **Dräger Safety AG & Co. KGaA**

6 Address: **Revalstraße 1, 23560 Lübeck, Germany**

7 This supplementary certificate extends EU-Type Examination Certificate No. BVS 13 ATEX G 001 X to apply to products designed and constructed in accordance with the specification set out in the Annex of the said certificate but having any variations specified in the Annex attached to this certificate and the documents therein referred to.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, 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 the confidential test report PFG-no. 41300313P NIX.

9 Compliance with the Essential Health and Safety Requirements with respect to the measuring function for explosion protection has been assured by compliance with:

EN 60079-29-1:2007
EN 60079-29-1:2016
EN 50104:2010
EN 50271:2010
EN 50271:2018

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix 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:

see PTB 11 ATEX 1005 X Ausgabe 01

DEKRA Testing and Certification GmbH
Bochum, 2020-02-04

Signed: Kilisch
Managing Director

This certificate may only be reproduced in its entirety and without any change.

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13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 13 ATEX G 001 X
Supplement 08

15 **Product description**

15.1 **Subject and type**

Transmitter types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052*, ETR 040*, ETR 050*

Coding of type:		(1)TR 0(2)(3)(4)
(1)	E, I or X	Sensor interface: infrared (I) or catalytic (X)
(2)	4 or 5	Material of housing: aluminium (4) or stainless steel (5)
(3)		internal sensor:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or XDS 0200 (1) or Ex-Sensor LC NPT (2)
		external sensor with junction box EAC 01**:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or XDS 0200 (1) or Ex-Sensor LC NPT (2)
		external sensor with other junction boxes:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2) or IDS 0111 (1) or IDS 0112 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or IDS 0012 (0) or Polytron SE Ex PR M* DQ (1) or Polytron SE Ex PR NPT1 DQ (1) or Polytron SE Ex HT M DQ (1) or Polytron SE Ex LC M1/2 DD (2)
	0	DrägerSensor (internal sensor only) for ETR 0*0*
(4)	0, 1, I, J	interface: "d", 4-20 mA (0) or "d", 4-20 mA with relays (1) or "d"+"e", 4-20 mA (I) or "d"+"e", 4-20 mA with relays (J)

15.2 **Description**

Reason for the supplement:
Modification of the software of the transmitter and re-testing of types ITR 041*, ITR 051*, ITR 042* and ITR 052* according to EN 60079-29-1:2016 and EN 50271:2018.
The test according to EN 50271:2018 concerns only transmitters types XTR 0*1*, XTR 0*2*, ETR 0*0*, ITR 041*, ITR 051*, ITR 042* and ITR 052*. The test according to EN 60079-29-1:2016 concerns only transmitters types XTR 0*1*, XTR 0*2*, ITR 041*, ITR 051*, ITR 042* and ITR 052*.

Description of Product

The transmitters ITR 0*1* (Polytron 8700 with sensor Dräger PIR 7000 type 334), ITR 0*2* (Polytron 8700 with sensor Dräger PIR 7000 type 340), XTR 0*0* (Polytron 8310 with Dräger Sensor IR) and XTR 0*1* (Polytron 8200 with DrägerSensor PR M DQ, HT M DQ or PR NPT DQ) are fixed equipment for the measurement of flammable gases and vapours mixed with air at volume fractions up to the lower explosive limit. The transmitters XTR 0*2* (Polytron 8200 with Ex-sensor LC M or LC NPT) are fixed equipment for the measurement of flammable gases and vapours mixed with air at volume fractions up to 10 % of the lower explosive limit. The sensor may be directly connected to the transmitter housing or operated as remote sensor.
The transmitters type ETR 0*0* (Polytron 8100 with DrägerSensor O_2 or DrägerSensor O_2 LS) are fixed equipment for the measurement of oxygen. The sensor is directly fitted to the transmitter housing. Operation with a remote sensor is not subject of this supplement to the EU-type examination certificate.
A 4-20 mA interface serves for transmission of the measured value to a control unit.
The transmitters can be equipped with a relay module that provides two alarm relays and one fault relay.

This certificate may only be reproduced in its entirety and without any change.

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15.3 **Parameters**

see PTB 11 ATEX 1005 X Ausgabe 01

15.4 **Measuring function for explosion protection**

This EU-type examination certificate covers:

- transmitters types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052* with software version 3.1.0 and transmitters types ETR 040* and ETR 050* with software version 3.1.0 (main) and 5 (SIOS)
- for transmitters types ITR 0*1* and ITR 0*2* (infrared sensor) the measuring function for those gases and vapours which are listed in the instruction manual with reference to the EU-type examination certificate BVS 08 ATEX G 001 X
- for transmitters type XTR 0*0* (infrared sensor) when operated in gas category methane the measuring function for methane in the measuring range 0 - 100 % LEL, when operated in gas category propane the measuring function for propane, i-butane, n-butane, n-pentane, n-hexane, n-octane, n-nonane and i-propanol in the measuring range 0 - 100 % LEL and ethanol and ethyl acetate in the measuring range 0 - 70 % LEL, and when operated in gas category ethylene the measuring function for ethylene, propylene, toluene, acetone and ethyl acetate in the measuring range 0 - 100 % LEL and methanol in the measuring range 0 - 70 % LEL
- for transmitters type XTR 0*1* (catalytic combustion sensor) the measuring function for methane, propane, acetone, acetylene, ammonia, special boiling point spirit 65/95, benzene, 1,3-butadiene, n-butane, 2-butanone, n-butyl acetate, diethyl ether, dimethyl ether, acetic acid, ethanol, ethylene, ethyl acetate, ethylene oxide, n-hexane, methanol, methyl methacrylate, n-octane, n-pentane, 2-propanol, propylene, propylene oxide, n-nonane, toluene, o-xylene and hydrogen in the measuring range 0 - 100 % LEL
- for transmitters type XTR 0*2* (catalytic combustion sensor) the measuring function for methane, propane, ethylene, acetylene, propylene, i-butylene, benzene, n-nonane and hydrogen in the measuring range 0 - 10 % LEL
- for transmitters type ETR 0*0* (electrochemical sensor) the measuring function for oxygen (measurement of inertisation) in the measuring range 0 - 5...25 % O_2
- use of the following outputs for safety relevant purposes:
  - display
  - 4-20 mA output for measured values
  - relays
- use of the following accessories for transmitters types ITR 0*1* and ITR 0*2*:
  - Spacer (part no. 6812617)
  - use of the following accessories for sensor PIR 7000:
    - Mounting set PIR 7000 (part no. 68 11 648)
    - Splash guard PIR 7000 (part no. 68 11 911)
    - Insect guard PIR 7000 (part no. 68 11 609)
    - Hydrophobic filter PIR 7000 (part no. 68 11 890)
    - Calibration adapter PIR 7000 (part no. 68 11 610)
    - Status indicator PIR 7000 (part no. 68 11 625)
    - Flowcell PIR 7000 (part no. 68 11 490)
    - Bump test adapter PIR 7000 (part no. 68 11 630)
    - Process adapter PIR 7000 (part no. 68 11 915)
    - Prozess cuvette PIR 7000 (part no. 68 11 415)
    - Prozess cuvette PIR 7000 SGR (part no. 68 13 219)
    - Junction box Ex e (part no. 68 11 898)
    - Junction boxes Ex d (part no. 45 20 561)
    - Magnetic wand (part no. 45 44 101)

This certificate may only be reproduced in its entirety and without any change.

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

- use of the following accessories for transmitters type XTR 0*0*:
  - use of the following accessories for DrägerSensor IR:
    - Splash guard (part-no. 68 10 796)
    - Calibration adapter (part-no. 68 10 859)
    - Weather guard (part-no. 68 11 135)
    - Gassing-/process adapter (part-no. 68 11 330)
    - Magnetic wand (part-no. 45 44 101)
    - Junction box "Ex d" (part-no. 68 11 161)
    - Junction box "Ex e" (part-no. 68 11 299)
    - Junction box "Ex e" (part-no. 68 11 159)
- use of the following accessories for transmitters type XTR 0*1*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
  - Process adapter (part no. 68 12 470)
  - Remote calibration adapter DQ (part no. 68 12 480)
- use of the following accessory for transmitters type XTR 0*2*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
- use of the following accessories for transmitters type ETR 0*0*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
  - Sensor test dongle (part no. 83 17 619)
  - Diagnostic dongle (part no. 83 17 860)

The EU-type examination includes the following deviations from the operating conditions required by EN 60079-29-1:

- Extended range of temperature at operation: -40 °C to +70 °C (with relay module)
-40 °C to +77 °C (ITR 0*1* und ITR 0*2*; without relay module)
-40 °C to +65 °C (XTR 0*0*)
-40 °C to +80 °C (XTR 0*1* and XTR 0*2*; without relay module)
-40 °C to +85 °C (Polytron SE Ex LC M1/2 DD)
- Extended range of ambient pressure: 70 kPa to 130 kPa
- Extended range of humidity of the measured gas: 0 % RH to 95 % RH (ITR 0*1*, ITR 0*2*, and XTR 0*0*)
5 % RH to 95 % RH (XTR 0*1* and XTR 0*2*)

The EU-type examination includes the following deviations from the operating conditions required by EN 50104:

- Extended range of temperature at operation: -40 °C to +65 °C (DrägerSensor O_2 LS)
- Deviating range of temperature at operation: 0 °C to +55 °C (DrägerSensor O_2)
- Extended range of ambient pressure: 70 kPa to 130 kPa
- Extended range of humidity of the measured gas: 5 % RH to 95 % RH (DrägerSensor O_2 LS)
10 % RH to 95 % RH (DrägerSensor O_2)

16 Test report

PFG-no. 41300313P NIX of 2020-02-04
EU-type examination certificate PTB 11 ATEX 1005 X Ausgabe 01 of 2017-05-10

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Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

17 Special Conditions for Use

- see EU-type examination certificate PTB 11 ATEX 1005 X Ausgabe 01
- If operated with a relay module:
  - The main alarm shall be configured "latching" and "non-acknowledgeable" or "pre-acknowledgeable".
  - The pre-alarm shall only be configured "acknowledgeable" if it is used for operation of an acoustic alarm device.
- For transmitters types ITR 0*1* and ITR 0*2*:
  - see EU-type examination certificate BVS 08 ATEX G 001 X
- For transmitters type XTR 0*0*:
  - see 9th supplement to the EU-type examination certificate BVS 05 ATEX E 143 X
- For transmitters type XTR 0*1*:
  - When exposed to a directed flow of air mixed with gas, the measured values can be increased by up to 32 %.
  - When operated with the remote calibration adapter DQ the measured values can be increased by up to 70 %.
- For transmitters type XTR 0*2*:
  - Operate the transmitter when connected to a control unit that has a latching over-range indication. Do not use internal alarm relays of the transmitter.
  - When exposed to a directed flow of air mixed with gas, the measured values can be increased by up to 32 %.
  - Adjust the transmitter with the sensor in its operational orientation.
  - False alarms can occur during warming up of the sensor.
- For transmitters type ETR 0*0*:
  - The response time t_{20} can exceed the limit of EN 50104 for small concentration changes.

18 Essential Health and Safety Requirements

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are covered by the standards listed under item 9.

19 Drawings and Documents

Drawings and documents are listed in the confidential test report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, dated 2020-02-04

Managing Director

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Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 11 ATEX 1005 X **Issue: 4**

(4) Product: Gas detection transmitters ETR/ITR/XTR/RCU 0***, EAC 01**

(5) Manufacturer: Dräger Safety AG & Co. KGaA

(6) Address: Revalstraße 1, 23560 Lübeck, Germany

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

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the 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 the confidential Test Report PTB Ex 22-21212.

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

EN IEC 60079-0:2018+AC:2020, EN 60079-1:2014+AC:2018,
EN IEC 60079-7:2015+A1:2018, EN 60079-11:2012, EN 60079-31:2014

(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 in accordance to the Directive 2014/34/EU. 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 2 G Ex db IIC T6...T4 Gb	**bzw.**
II 2 G Ex db ia IIC T6...T4 Gb	**bzw.**
II 2 G Ex db eb IIC T6...T4 Gb	**bzw.**
II 2 D Ex tb IIIC T80°C...T130°C Db	**bzw.**
II 2 G Ex db eb ia IIC T6...T4 Gb	**bzw.**

ZSEx001e c

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EU-TYPE EXAMINATION CERTIFICATE

(Translation)

Ex	**II 2 (1) G Ex db [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db ia [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db eb [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db eb ia [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) D Ex tb [ia Da] IIIC T135°C Db**	

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, December 14, 2022
On behalf of PTB:

Dr.-Ing. M. Thedens
Regierungsdirektor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 24

ZSEx001e c

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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 11 ATEX 1005 X, Issue: 4**

(15) Description of Product

The Gas detection transmitters ETR/ITR/XTR/RCU 0***, EAC 01** consist of three different types of sensor and interfaces. The Gas detection transmitter type ETR 0*** uses the electrochemical sensing principle or an ultrasonic sensor with an electrochemical sensor interface, the Gas detection transmitter type ITR 0*** uses the infrared sensing principle and the Gas detection transmitter type XTR 0*** uses the catalytic sensing principle or infrared sensing principle with a catalytic sensor interface. The Gas detection transmitter type RCU 0*** shall only be used with separate certified sensors. The sensor frontend (EC sensing head) of the ETR 0*** series comprises a galvanically separating barrier circuit (inside the flameproof enclosure) and intrinsically safe electronics located out-side the flameproof enclosure as well as an electro-chemical sensor or ultrasonic sensor - all of them being covered by this certificate. The sensors of the ITR 0*** and XTR 0*** series are covered by separate certifications, which are accepted under this certificate.

The internal electronic covers the intrinsically safe fieldbus under consideration of the maximum FISCO input ratings applicable for the operation as both FISCO Field device or alternatively non-intrinsically safe fieldbus PA/FF.

Type code:

***TR 0** * * *
1 2 3 4

1: Sensing principle / sensors
- E = electrochemical
- I = infrared
- X = catalytic

2: Series and enclosure material
- 2 = 02/03 series, aluminium enclosure
- 3 = 02/03 series, stainless steel enclosure
- 4 = 04/05 series, aluminium enclosure
- 5 = 04/05 series, stainless steel enclosure

3: Sensors

ITR 0 * * *

3: Sensors
- 0 = IDS 0001
- 1 = IDS 0101

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2 = IDS 0102
5 = IDS 0105

ETR 0 * * *
3: Sensors
0 = DrägerSensor or DrägerSensor XS with adapter *or DrägerSensor with Gas Generator type EDS 03***
2 = Ultraschall Sensor

XTR 0 * * *
3: Sensors
0 = IDS 0002
1 = XDS 020*
2 = Ex-Sensor LC NPT

4: Interface

0	=	"d", 4-20 mA
1	=	"d", 4-20 mA with Relay
2	=	"d", Modbus RTU
A	=	"d"+"ia", Foundation Fieldbus
B	=	"d"+"ia", Foundation Fieldbus SIF
E	=	"d"+"ia", Profibus
F	=	"d"+"ia", Profisafe
I	=	"d"+"e", 4-20 mA
J	=	"d"+"e", 4-20 mA with Relay
K	=	"d"+"e", Modbus RTU
S	=	"d"+"e"+"ia", Foundation Fieldbus
T	=	"d"+"e"+"ia", Foundation Fieldbus SIF
W	=	"d"+"e"+"ia", Profibus
X	=	"d"+"e"+"ia", Profisafe

Type code for Junction Box, type EAC 01 (Remote Sensor)**

EAC 01 * *
1 2

1: Enclosure Material
0 = Aluminum
1 = Stainless Steel
2: Features not relevant for the type of protection

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

Type code for Remote Box, type RCU 0*

RCU 0 * * *
1 2 3

1: Enclosure Material
2 = Aluminum
3 = Stainless Steel
2: Features not relevant for the types of protection

3: Interface

0	=	"d", 4-20 mA
1	=	"d", 4-20 mA with Relay
2	=	“d”, Modbus RTU
A	=	"d"+"ia", Foundation Fieldbus
B	=	"d"+"ia", Foundation Fieldbus SIF
E	=	"d"+"ia", Profibus
F	=	"d"+"ia", Profisafe
I	=	"d"+"e", 4-20 mA
J	=	"d"+"e", 4-20 mA with Relay
K	=	"d"+"e", Modbus RTU
S	=	"d"+"e"+"ia", Foundation Fieldbus
T	=	"d"+"e"+"ia", Foundation Fieldbus SIF
W	=	"d"+"e"+"ia", Profibus
X	=	"d"+"e"+"ia", Profisafe

The relation between ambient temperature and the assigned temperature class is as follows:

Type	Ambient temperature range	Temperature class (Gas)	Temperature class (dust)
ITR 0*0* RCU 0*** XTR 0*0*	-40 °C to +65 °C	T4	T130°C
All other versions	-40 °C to +80 °C	T4	T130°C
All versions	-40 °C to +40 °C	T6	T80°C
ETR 02/032* ETR 04/052*	-40 °C to +70 °C	T4	T135°C
ETR 02/030* ETR 04/050*	-40 °C to +70 °C	T4	T135°C
ETR 02/030* ETR 04/050*	-40 °C to +40 °C	T6	T135°C

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

Electrical Ratings:

Maximum supply wattage: P_{max}: 5 W

Supply:

ETR 02/03** series	10...30 VDC, 0.08...0.15 A
ITR 02/03** series	10...30 VDC, 0.1...0.75 A
XTR 02/03** series	10...30 VDC, 0.1...0.2 A
ETR 04/05** series	10...30 VDC, 0.1...0.35 A
ITR 04/05** series	10...30 VDC, 0.3...1.0 A
RCU 02/03** series	10...30 VDC, 0.3...1.0 A
XTR 04/05** series	10...30 VDC, 0.15...0.45 A
Relay	5A, 30 VDC or 230 VAC

Fieldbus circuit:
Field device as Fieldbus system in type of protection Intrinsic Safety Ex ia IIC; FISCO in acc. of IEC 60079-11, using only for the interface type A; B; E; F; S; T; W and X
or
Field device as Fieldbus system (non-intrinsically safe) using only for the interface type 2 and K
Electrical data: Maximum values:

Model	Voltage, Ui [VDC]	Current, Ii [mA]	Power, Pi [mW]
ETR 04*(*) ETR 05*(*) ITR 04*(*) ITR 05*(*) RCU 02*(*) RCU 03*(*) XTR 04*(*) XTR 05*(*)	17.5	380	5320

For the Gas detection transmitters series ETR ****
Sensor circuit: in type of protection Intrinsic safety Ex ia IIC / IIIC;
only for connecting Dräger Sensor or XS with adapter or
ultrasonic sensor or DraegerSensor with electrochemical sensor
type EDS 03**

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

(16) Test Report PTB Ex22-21212

(17) Specific conditions of use

The circuits are limited to overvoltage category I/II/III (non mains/mains circuits) as defined in IEC 60664-1 for FISCO field device operation.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. M. Thedens
Regierungsdirektor

Braunschweig, December 14, 2022

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In case of dispute, the German text shall prevail.

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ITEM	Tag	950-GDZ-03108 : O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)	Module	UD	
TASK	code	C10001541	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.**		ARTA-4680			
Manufacturer	Dräger			**Model**		Polytron 8100 EC d S 4-20/Hart (ETR 0500)			
Cert No.	PTB 11 ATEX 1005X (TR)			**Equipment Ambient Temp.**		-40 °C to +40 °C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db [ia Ga]	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP65/66/67

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		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	NA	
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	Note	See PL C30002328
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	950-GDZ-03108	: O2 DET. FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001541	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		PL	
	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	Note	See PL C30002325 & C30002326
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	OK	
	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	950-GDZ-03108	: O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10001541	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

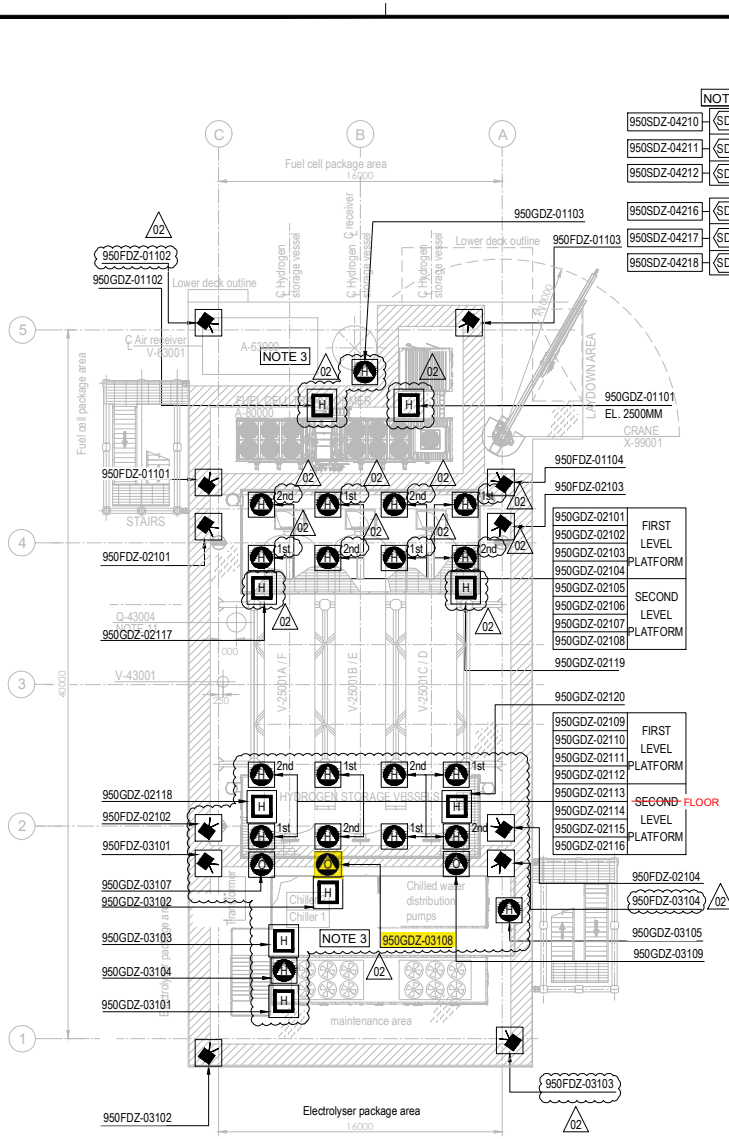
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

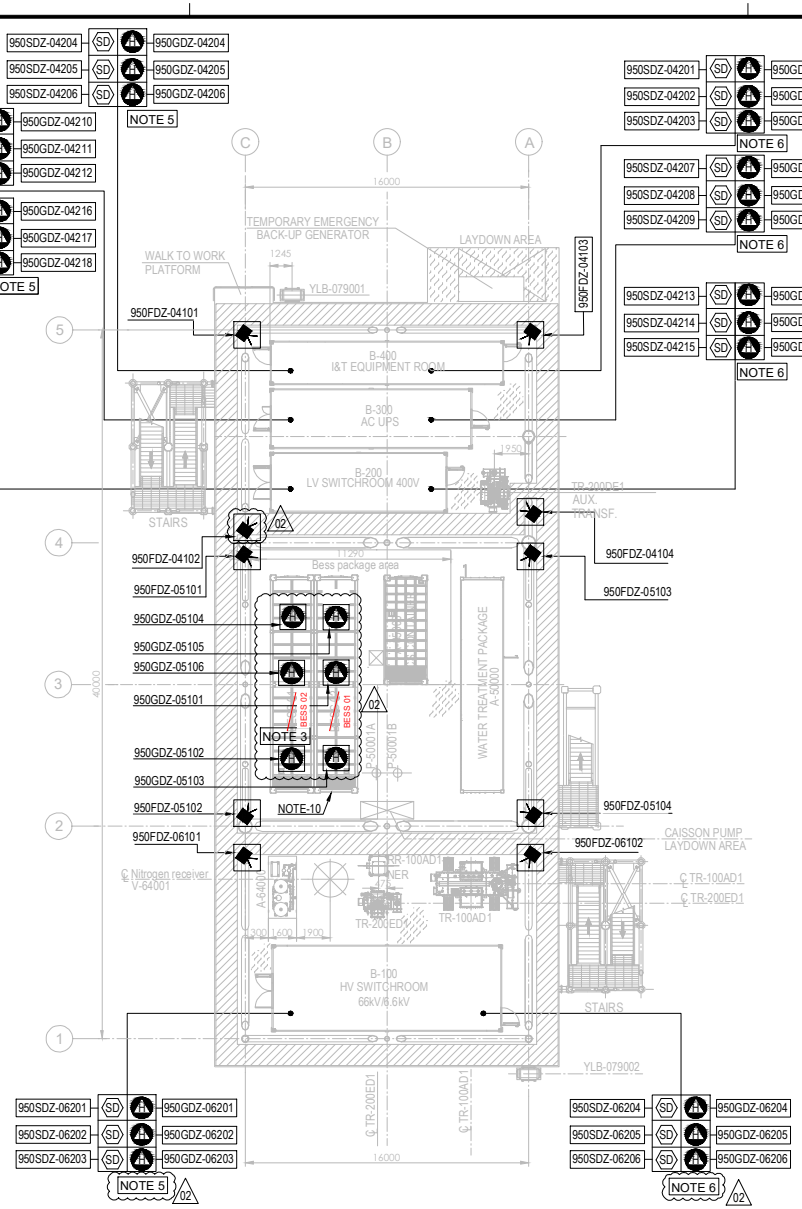
Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Francesco Zucca	Luca Mussi	
Date	2024-12-30	2025-01-07	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-30T14:55:03.613Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-07T16:31:11.680Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

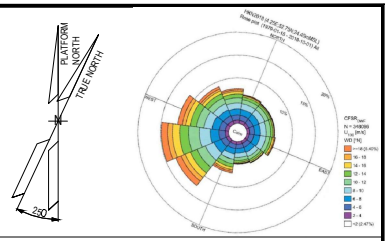
REV. 02



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



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



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 95OGDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

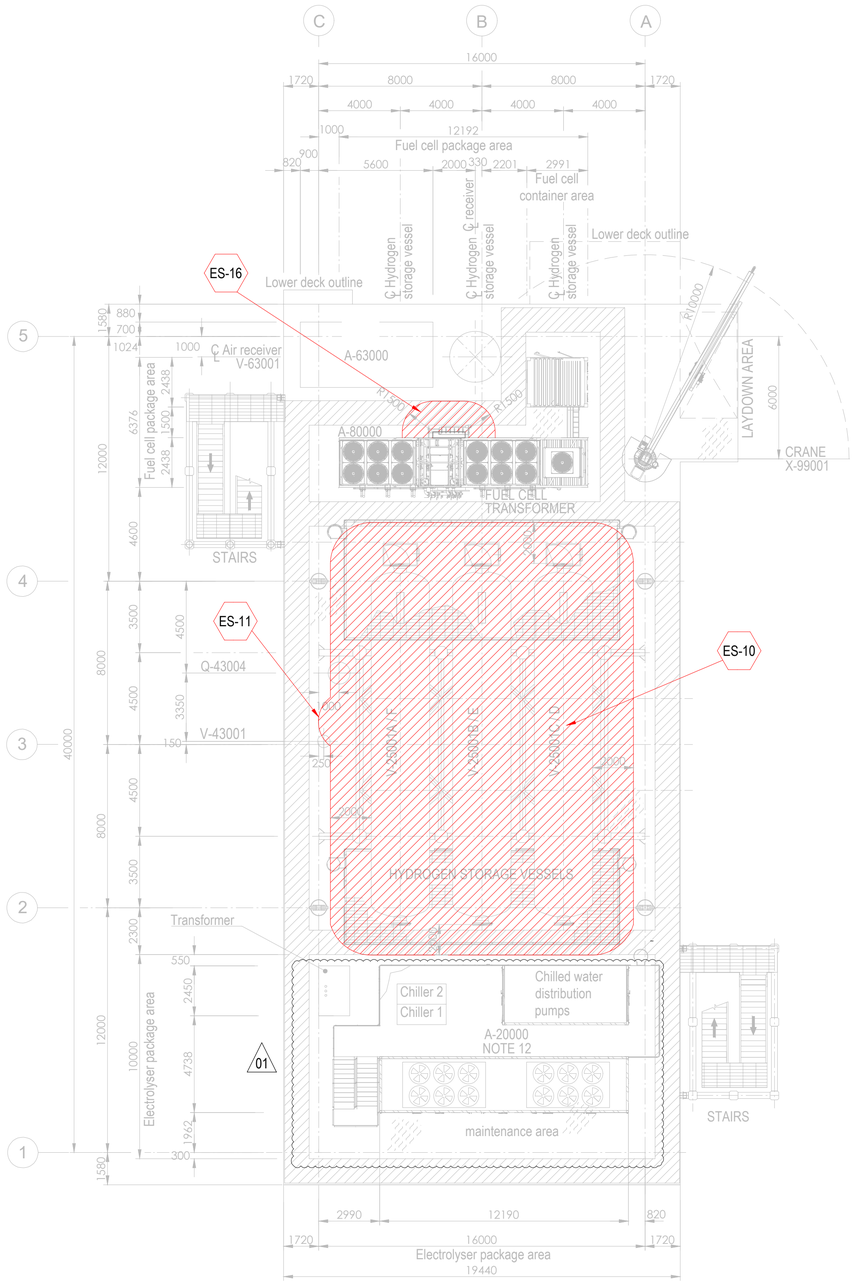
TITLE :
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

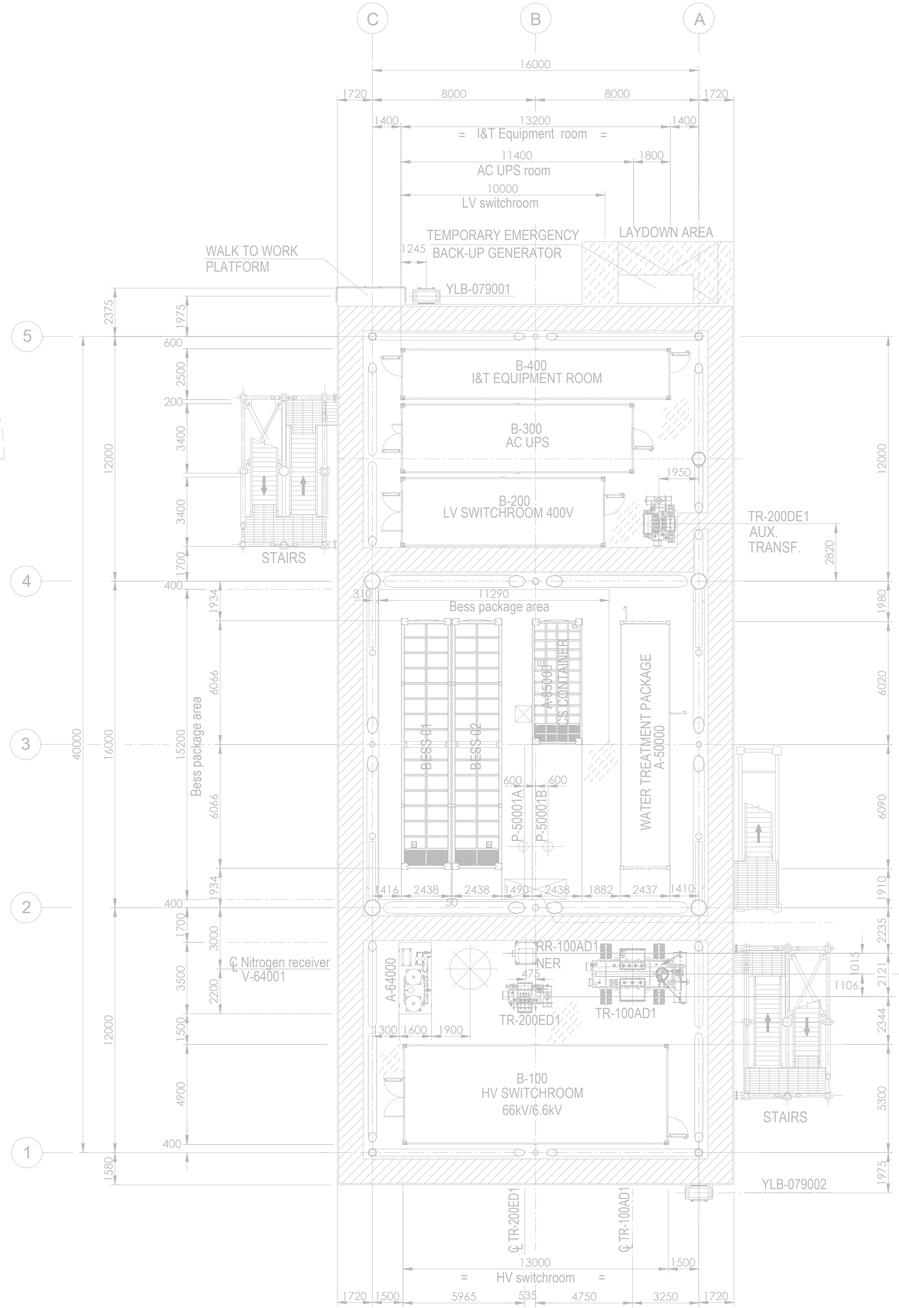
File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01



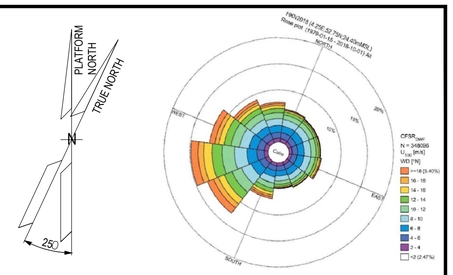
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

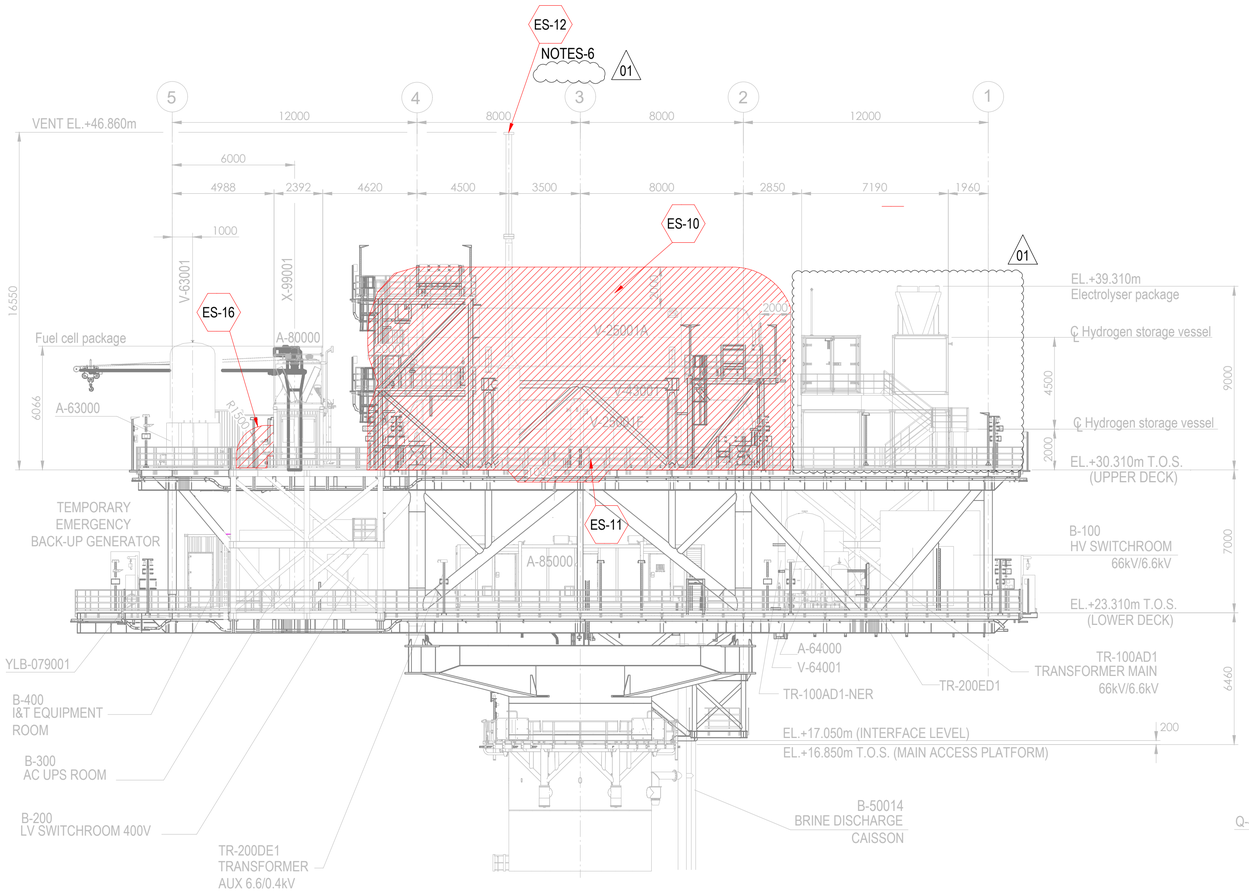
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

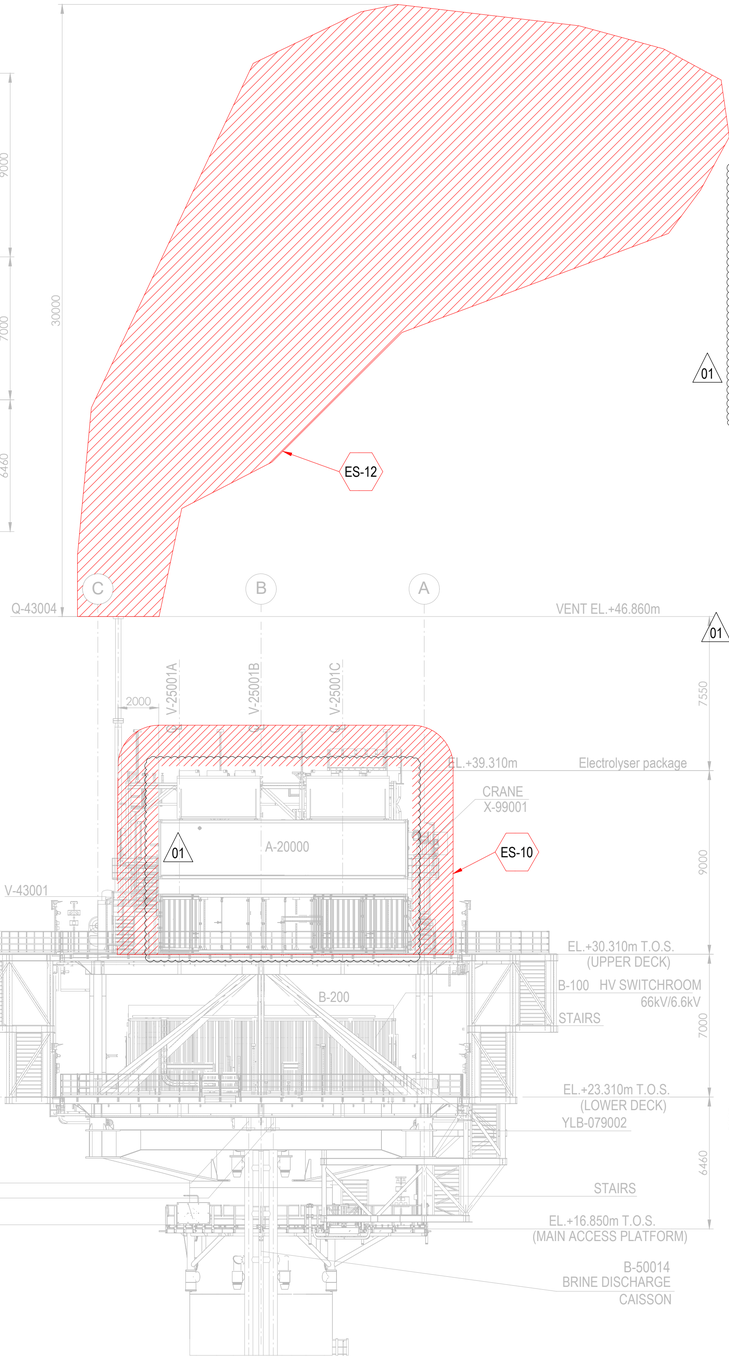
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



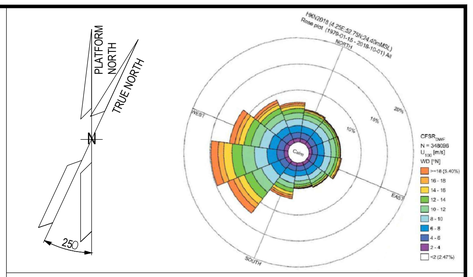
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

FIELD | MULTICABLE | I&T EQUIPMENT ROOM (ITER)

INSTRUMENTS | JUNCTION BOX 950-JE-03101 | No. | MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

950-GDZ-03101 (PWR+ 4-20mA PWR-) RD WH BK — NOTE-2 — C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS → TB-1 terminals 1, 2, 3 (RD WH BK) → TR1

950-GDZ-03102 — NOTE-2 — C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS → terminals 4, 5, 6 → TR2

950-GDZ-03103 — NOTE-2 — C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS → terminals 7, 8, 9 → TR3

950-GDZ-03104 — NOTE-2 — C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS → terminals 10, 11, 12 → TR4

950-GDZ-03105 — NOTE-2 — C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS → terminals 13, 14, 15 → TR5

950-GDZ-03107 — NOTE-2 — C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS → terminals 16, 17, 18 → TR6

950-GDZ-03108 — NOTE-2 — C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS → terminals 19, 20, 21 → TR7

950-GDZ-03109 — NOTE-2 — C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS → terminals 22, 23, 24 → TR8

SPARE → terminals 25, 26, 27 → TR9

SPARE → terminals 28, 29, 30 → TR10

SPARE → terminals 31, 32, 33 → TR11

SPARE → terminals 34, 35, 36 → TR12

SH, SH, SH, SH, SH, SH, SH, SH, SH, SH, SH, SH, SH, OS

950-JE-03101/B400-FGS-003
~~950-JE-03101/B400-FGS-002~~
12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03101

TR1 → 950-GDZ-03101
TR2 → 950-GDZ-03102
TR3 → 950-GDZ-03103
TR4 → 950-GDZ-03104
TR5 → 950-GDZ-03105
TR6 → 950-GDZ-03107
TR7 → 950-GDZ-03108
TR8 → 950-GDZ-03109
TR9 → SPARE
TR10 → SPARE
TR11 → SPARE
TR12 → SPARE

Shield Bar — I.E.

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03101

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 036	REV. 01

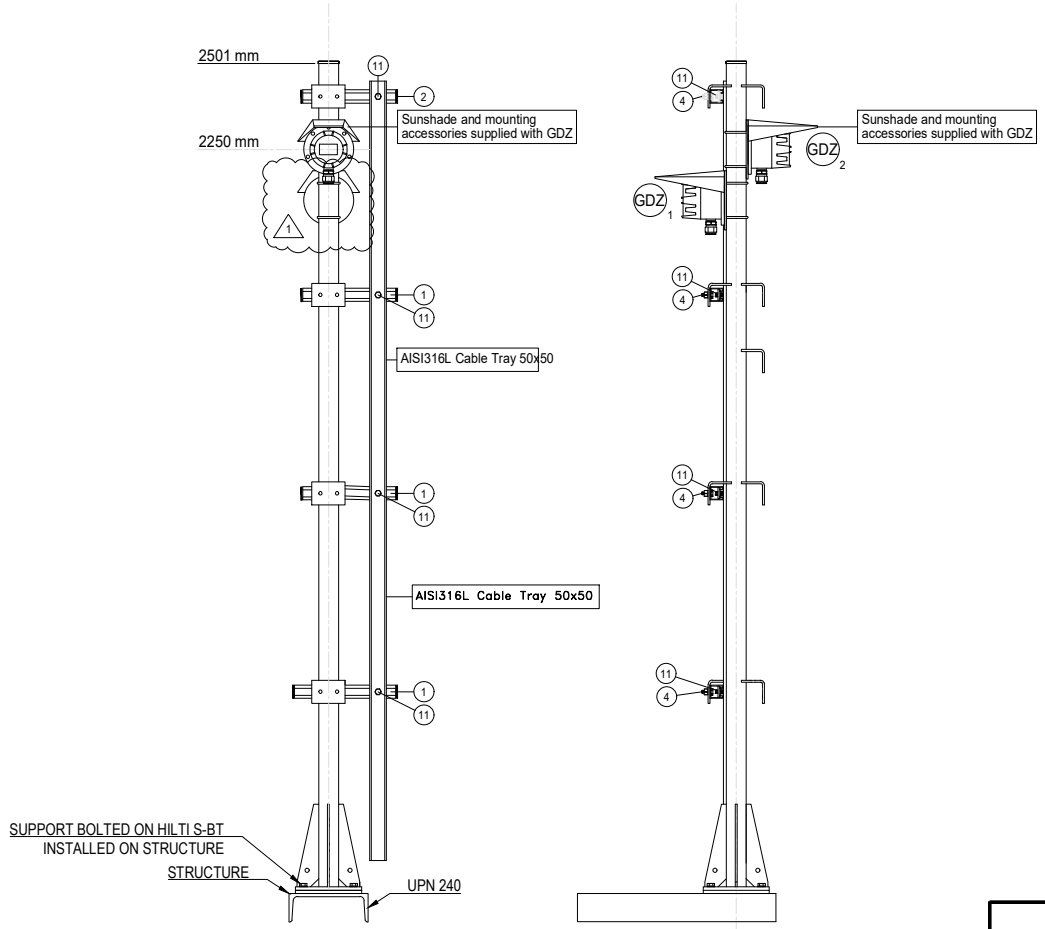
File Name : 123A90-DDL-IN-DG-40016_Rev.01

FGS-14

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00

POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	2m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	8
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4



POLE	ITEM	DESCRIPTION	TAGNAME
1	GDZ1	H2 GAS DETECTOR - CATALITIC TYPE	950-GDZ-02110
	GDZ2	O2 GAS DETECTOR - CATALITIC TYPE	950-GDZ-03108
2	GDZ1	H2 GAS DETECTOR - CATALITIC TYPE	950-GDZ-02112
	GDZ2	O2 GAS DETECTOR - CATALITIC TYPE	950-GDZ-03109
3	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02113
4	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02114
5	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02115
6	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02116

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

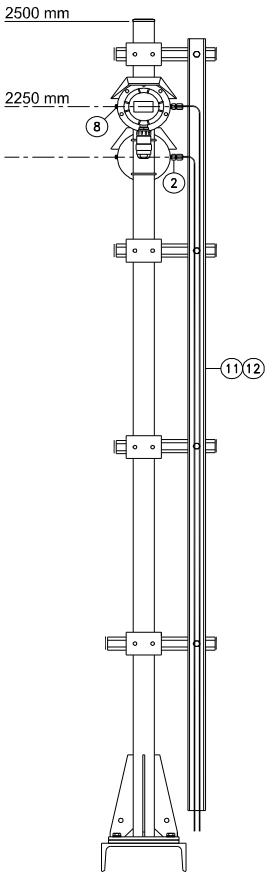
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 033	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02109
	950-GDZ-02118
2	950-GDZ-02110
	950-GDZ-03108
3	950-GDZ-02112
	950-GDZ-03109
4	950-GDZ-02113
5	950-GDZ-02114
6	950-GDZ-02115
7	950-GDZ-02116

NOTE:

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

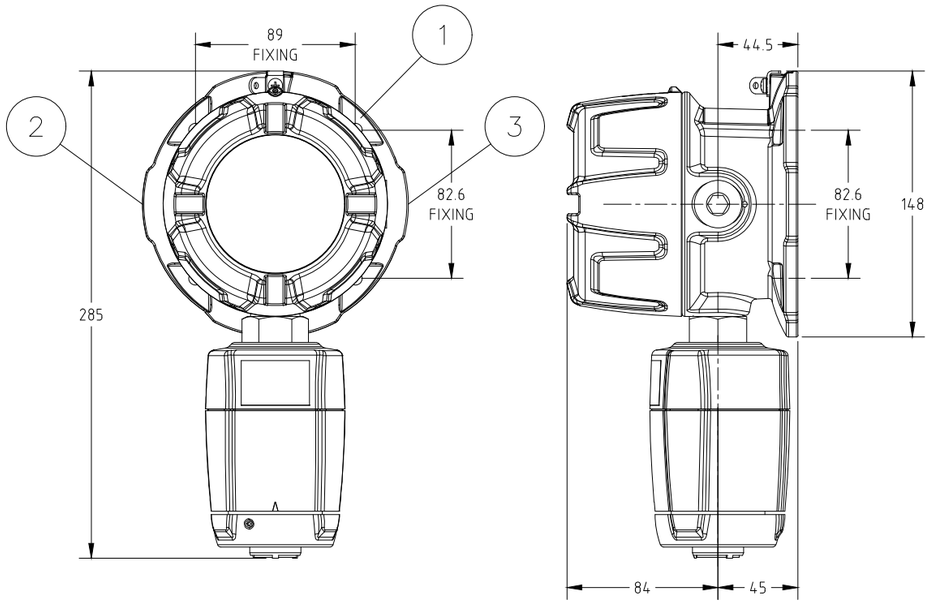
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

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	2
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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OXYGEN POINT DETECTOR / PIPE MOUNTING



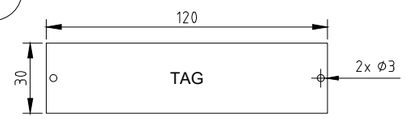
ITEM	DESCRIPTIONS	NR
1	Oxygen Point Detector, DRÄGER Polytron 8100 EC d S 4-20/HART	1
2	Reducer 3/4" NPT - M20 Ex d AISI 316	2
3	3/4" plug Ex d AISI 316	1
4	Pipe mount bracket kit Polytron 5000/8000 series, DRÄGER	1
5	Sun and weather protection kit Polytron, DRÄGER	1
6	Stainless Steel Name Plate	1
7		
8		
9		
10		

INSTALLATION
QUANTITY

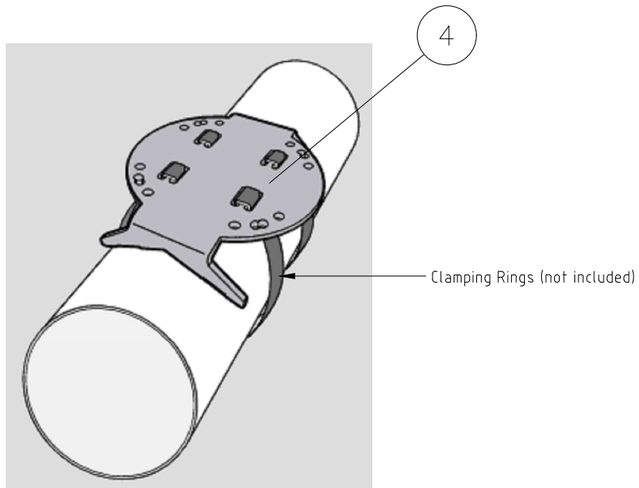
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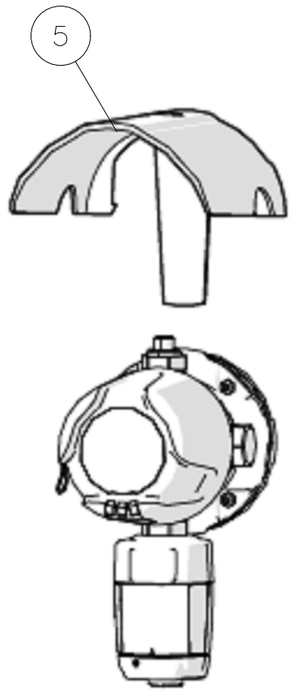
6

STAINLESS STEEL
NAME PLATE DETAILS

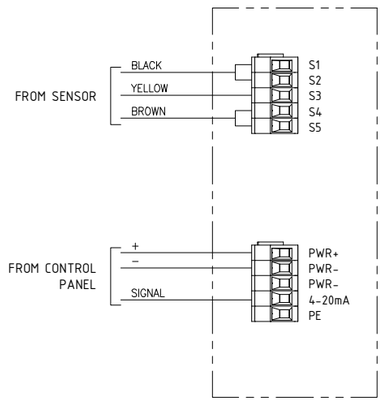


NOTE 5





WIRING



FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
OXYGEN POINT DETECTOR / PIPE MOUNTING

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 011 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

OXYGEN POINT DETECTOR / PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-GDZ-03107
2	950-GDZ-03108
3	950-GDZ-03109

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
OXYGEN POINT DETECTOR / PIPE MOUNTING – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 012

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

OXYGEN POINT DETECTORS

POS.	TAG NUMBER	SERVICE
1	950-GDZ-03107	O2 DET. FZ-03 ELECTROLYZER PK AREA
2	950-GDZ-03108	O2 DET. FZ-03 ELECTROLYZER PK AREA
3	950-GDZ-03109	O2 DET. FZ-03 ELECTROLYZER PK AREA

File: 1724000821-IN-DS-00004-02.xlsx
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Dräger Polytron® 8100 EC
Detector for toxic gases and oxygen

The Polytron® 8100 EC is Dräger's top of the line explosion-proof transmitter for the detection of toxic gases or oxygen. It uses a high performance plug and play electrochemical DrägerSensor to detect a specific gas. Besides having a 3-wire 4 to 20 mA analog output with relays, it also offers HART®, Modbus and Fieldbus protocol, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Durable, intelligent and sensitive – the DrägerSensor®

With unique electrochemical DrägerSensors, Polytron 8100 can detect over 100 toxic gases and oxygen. These long life sensors provide continuous detection even under the harshest conditions. DrägerSensors offer the industry's widest temperature and humidity range between -40 °C to +65 °C (-40 °F to +150 °F). The built-in memory contains all calibration and configuration information: therefore the sensor ships pre calibrated and is ready for immediate operation. An intelligent sensor self-test function allows for predictive maintenance. The intrinsically safe connection of the sensor eliminates the need for a flame arrestor, giving you faster response times and higher sensitivity.

Easy device management via digital communication

The Dräger Polytron 8100 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces with PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8100 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information. The Polytron 8100 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8100 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8100 features a Class I, Div. 1 rated explosion proof enclosure made from epoxy coated aluminium or 316L stainless steel, making it suitable for a wide range of environmental conditions.

Remote sensor option does not require conduit

The remote sensor enclosure allows you to install the sensor separately from the transmitter. This 'external' installation makes it easier to use if the sensor has to be installed in a difficult to access or unfavorable position.

Technical Data

Dräger Polytron® 8100 EC			
Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Toxic gases and oxygen, dependent on the sensor used		
Measuring ranges	Customized adjustment, see sensor data sheet		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	see sensor datasheet		
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	w/o relay, non-remote	80 mA at 24 V
		w/ relay, remote	100 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 65 °C (-40 to 149 °F) without relay	
		-40 to 65 °C (-40 to 149 °F) with relay	
	Pressure	20.7 to 38.4 inch Hg / 700 to 1,300 mbar	
	Humidity	0 to 100 % r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Polyamide	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D), approx.		11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm
	Weight, approx.	Aluminium	6.6 lbs / 3.0 kg
		SS316 L	11.0 lbs / 5.0 kg
Approvals	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	FM Performance (H_2S sensor)	Certificate No: FM16NUS0015	
		FM 6340:2014, FM Class 3810:2005,	
		ISA–92.00.01-2010	
	CE marking	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Marine approvals	DNV GL, ABS, LR, CSS, RMRS	
	MED approval	Certificate no. MEDB0000411	
	DEKRA Performance approval (for O_2 sensors only)	Certificate no. BVS 13 ATEX G 001 X	
		EN 60079-29-16:2016	
	SIL 2 certified by TUEV Sued	Certificate no. Z10 053474 0023	

Ordering Information

Dräger Polytron® 8100 EC	Approval Code	Order Number
Dräger Polytron® 8100 EC d A 4-20/HART®	ETR 0400	83 44 403
Dräger Polytron® 8100 EC d A 4-20/HART® relay	ETR 0401	83 44 404
Dräger Polytron® 8100 EC d S 4-20/HART®	ETR 0500	83 44 412
Dräger Polytron® 8100 EC d S 4-20/HART® relay	ETR 0501	83 44 413
Dräger Polytron® 8xx0 Custom Configuration, e.g. Modbus – visit www.draeger.com/polytron to configure yours		83 44 800

Electrochemical DrägerSensors	Order Number
DrägerSensor® AC	68 10 595
Initial Operation Set for DrägerSensor AC	68 09 381
DrägerSensor® Cl_2	68 09 665
DrägerSensor® $COCl_2$	68 09 930
DrägerSensor® CO	68 09 605
DrägerSensor® CO LS	68 09 620
DrägerSensor® CO LH	68 12 570
DrägerSensor® H_2	68 09 685
DrägerSensor® H_2O_2 HC	68 09 675
DrägerSensor® H_2O_2 LC	68 09 705
DrägerSensor® H_2S LC	68 09 610
DrägerSensor® H_2S HC	68 09 710
DrägerSensor® H_2S	68 10 435
DrägerSensor® HCl	68 09 640
DrägerSensor® HCN	68 09 650
DrägerSensor® HCN LC	68 13 200
DrägerSensor® Hydrides	68 09 635
DrägerSensor® Hydrides SC	68 09 980
DrägerSensor® PH_3/AsH_3	68 09 695
DrägerSensor® Hydrazine	68 10 180
DrägerSensor® NH_3 LC	68 09 680
DrägerSensor® NH_3 HC	68 09 645
DrägerSensor® NH_3 TL	68 13 095
DrägerSensor® NH_3 FL	68 13 260
DrägerSensor® NO LC	68 09 625
DrägerSensor® NO_2	68 09 655
DrägerSensor® NO_2 LC	68 13 205
DrägerSensor® O_3	68 14 005
DrägerSensor® O_2 LS	68 09 630
DrägerSensor® OV1	68 10 740
DrägerSensor® OV2	68 10 745
DrägerSensor® SO_2	68 09 660

Accessories	Order Number
Magnetic wand	45 44 101
Sensor Test Dongle	83 17 619
Diagnostic Dongle	83 17 860
Pipe mount bracket	45 44 198
Duct mount kit	68 12 725
Duct mount adapter for remote EC sensing head	83 17 617
Remote adapter RS stainless steel	83 23 404

Ordering Information

IR Connection Kit Polytron® 5000/8000			45 44 197
PolySoft licence (1 year)			83 28 639
PolySoft licence (subscription)			83 28 640
EC Sensing Head Remote w/ mount kit			68 12 684
Connection cable w/ plug for		16 ft / 5 m	83 23 305
Remote EC Sensing Head		49 ft / 15 m	83 23 315
		98 ft / 30 m	83 23 330
Splash guard			68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx			37 02 198
Calibration adapter FKM Viton®			68 10 536
Gassing adapter		PE incl. tubing	45 09 314
Dust filter (not for Cl_2, HCl, H_2O_2, O_3, N_2H_4)			68 09 595
Dust filter (SO_2)			68 12 224
Selective filter A2F (CO, CO LS, H_2)			68 09 684
Selective filter K2F ($COCl_2$)			68 09 933
Selective filter NF (HCl)			68 09 643
Selective filter HSF (Hydrides)			68 09 862
Selective filter D3F (CO)			68 12 435
Selective filter MF (PH_3, AsH_3)			68 09 638
Selective filter K1F (SO_2)			68 09 663

HART® is a registered trademark of the HART Communication Foundation.

FOUNDATION fieldbus™ is a registered trademark of the Fieldbus Foundation™.

PROFIBUS® is a registered trademark of PROFIBUS and PROFINET International (PI).

PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.

Viton® is a registered trademark of the DuPont company.

Windows® is a registered trademark of Microsoft Corporation.

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
950-GDZ-02111	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1618	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02112	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2192	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02113	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2207	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02114	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2200	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02115	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1615	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02116	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2208	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02117	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1682	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02118	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1676	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02119	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1684	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02120	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1687	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03101	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1688	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03102	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1683	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03103	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1681	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03104	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1624	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03105	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1630	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03107	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4693	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03108	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4680	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03109	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4689	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04201	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1611	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04202	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1625	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04203	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1631	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04204	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTC-2205	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04205	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTC-2202	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04206	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTB-1613	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04207	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1635	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04208	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-0199	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04209	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1633	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04210	FZ-04 H2 detect. in B-300 AC UPS room	LOWER DECK	1724000821	Fores	Dräger	ARTB-1619	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	

Translation

1 EU-Type Examination Certificate Supplement 08

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

2 **Device with a measuring function for explosion protection Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 13 ATEX G 001 X**

4 Product: **Transmitters types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052*, ETR 040*, ETR 050***

5 Manufacturer: **Dräger Safety AG & Co. KGaA**

6 Address: **Revalstraße 1, 23560 Lübeck, Germany**

7 This supplementary certificate extends EU-Type Examination Certificate No. BVS 13 ATEX G 001 X to apply to products designed and constructed in accordance with the specification set out in the Annex of the said certificate but having any variations specified in the Annex attached to this certificate and the documents therein referred to.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, 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 the confidential test report PFG-no. 41300313P NIX.

9 Compliance with the Essential Health and Safety Requirements with respect to the measuring function for explosion protection has been assured by compliance with:

EN 60079-29-1:2007
EN 60079-29-1:2016
EN 50104:2010
EN 50271:2010
EN 50271:2018

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix 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:

see PTB 11 ATEX 1005 X Ausgabe 01

DEKRA Testing and Certification GmbH
Bochum, 2020-02-04

Signed: Kilisch
Managing Director

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Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
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13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 13 ATEX G 001 X
Supplement 08

15 **Product description**

15.1 **Subject and type**

Transmitter types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052*, ETR 040*, ETR 050*

Coding of type:		(1)TR 0(2)(3)(4)
(1)	E, I or X	Sensor interface: infrared (I) or catalytic (X)
(2)	4 or 5	Material of housing: aluminium (4) or stainless steel (5)
(3)		internal sensor:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or XDS 0200 (1) or Ex-Sensor LC NPT (2)
		external sensor with junction box EAC 01**:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or XDS 0200 (1) or Ex-Sensor LC NPT (2)
		external sensor with other junction boxes:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2) or IDS 0111 (1) or IDS 0112 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or IDS 0012 (0) or Polytron SE Ex PR M* DQ (1) or Polytron SE Ex PR NPT1 DQ (1) or Polytron SE Ex HT M DQ (1) or Polytron SE Ex LC M1/2 DD (2)
	0	DrägerSensor (internal sensor only) for ETR 0*0*
(4)	0, 1, I, J	interface: "d", 4-20 mA (0) or "d", 4-20 mA with relays (1) or "d"+"e", 4-20 mA (I) or "d"+"e", 4-20 mA with relays (J)

15.2 **Description**

Reason for the supplement:
Modification of the software of the transmitter and re-testing of types ITR 041*, ITR 051*, ITR 042* and ITR 052* according to EN 60079-29-1:2016 and EN 50271:2018.
The test according to EN 50271:2018 concerns only transmitters types XTR 0*1*, XTR 0*2*, ETR 0*0*, ITR 041*, ITR 051*, ITR 042* and ITR 052*. The test according to EN 60079-29-1:2016 concerns only transmitters types XTR 0*1*, XTR 0*2*, ITR 041*, ITR 051*, ITR 042* and ITR 052*.

Description of Product

The transmitters ITR 0*1* (Polytron 8700 with sensor Dräger PIR 7000 type 334), ITR 0*2* (Polytron 8700 with sensor Dräger PIR 7000 type 340), XTR 0*0* (Polytron 8310 with Dräger Sensor IR) and XTR 0*1* (Polytron 8200 with DrägerSensor PR M DQ, HT M DQ or PR NPT DQ) are fixed equipment for the measurement of flammable gases and vapours mixed with air at volume fractions up to the lower explosive limit. The transmitters XTR 0*2* (Polytron 8200 with Ex-sensor LC M or LC NPT) are fixed equipment for the measurement of flammable gases and vapours mixed with air at volume fractions up to 10 % of the lower explosive limit. The sensor may be directly connected to the transmitter housing or operated as remote sensor.
The transmitters type ETR 0*0* (Polytron 8100 with DrägerSensor O_2 or DrägerSensor O_2 LS) are fixed equipment for the measurement of oxygen. The sensor is directly fitted to the transmitter housing. Operation with a remote sensor is not subject of this supplement to the EU-type examination certificate.
A 4-20 mA interface serves for transmission of the measured value to a control unit.
The transmitters can be equipped with a relay module that provides two alarm relays and one fault relay.

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15.3 **Parameters**

see PTB 11 ATEX 1005 X Ausgabe 01

15.4 **Measuring function for explosion protection**

This EU-type examination certificate covers:

- transmitters types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052* with software version 3.1.0 and transmitters types ETR 040* and ETR 050* with software version 3.1.0 (main) and 5 (SIOS)
- for transmitters types ITR 0*1* and ITR 0*2* (infrared sensor) the measuring function for those gases and vapours which are listed in the instruction manual with reference to the EU-type examination certificate BVS 08 ATEX G 001 X
- for transmitters type XTR 0*0* (infrared sensor) when operated in gas category methane the measuring function for methane in the measuring range 0 - 100 % LEL, when operated in gas category propane the measuring function for propane, i-butane, n-butane, n-pentane, n-hexane, n-octane, n-nonane and i-propanol in the measuring range 0 - 100 % LEL and ethanol and ethyl acetate in the measuring range 0 - 70 % LEL, and when operated in gas category ethylene the measuring function for ethylene, propylene, toluene, acetone and ethyl acetate in the measuring range 0 - 100 % LEL and methanol in the measuring range 0 - 70 % LEL
- for transmitters type XTR 0*1* (catalytic combustion sensor) the measuring function for methane, propane, acetone, acetylene, ammonia, special boiling point spirit 65/95, benzene, 1,3-butadiene, n-butane, 2-butanone, n-butyl acetate, diethyl ether, dimethyl ether, acetic acid, ethanol, ethylene, ethyl acetate, ethylene oxide, n-hexane, methanol, methyl methacrylate, n-octane, n-pentane, 2-propanol, propylene, propylene oxide, n-nonane, toluene, o-xylene and hydrogen in the measuring range 0 - 100 % LEL
- for transmitters type XTR 0*2* (catalytic combustion sensor) the measuring function for methane, propane, ethylene, acetylene, propylene, i-butylene, benzene, n-nonane and hydrogen in the measuring range 0 - 10 % LEL
- for transmitters type ETR 0*0* (electrochemical sensor) the measuring function for oxygen (measurement of inertisation) in the measuring range 0 - 5...25 % O_2
- use of the following outputs for safety relevant purposes:
  - display
  - 4-20 mA output for measured values
  - relays
- use of the following accessories for transmitters types ITR 0*1* and ITR 0*2*:
  - Spacer (part no. 6812617)
  - use of the following accessories for sensor PIR 7000:
    - Mounting set PIR 7000 (part no. 68 11 648)
    - Splash guard PIR 7000 (part no. 68 11 911)
    - Insect guard PIR 7000 (part no. 68 11 609)
    - Hydrophobic filter PIR 7000 (part no. 68 11 890)
    - Calibration adapter PIR 7000 (part no. 68 11 610)
    - Status indicator PIR 7000 (part no. 68 11 625)
    - Flowcell PIR 7000 (part no. 68 11 490)
    - Bump test adapter PIR 7000 (part no. 68 11 630)
    - Process adapter PIR 7000 (part no. 68 11 915)
    - Prozess cuvette PIR 7000 (part no. 68 11 415)
    - Prozess cuvette PIR 7000 SGR (part no. 68 13 219)
    - Junction box Ex e (part no. 68 11 898)
    - Junction boxes Ex d (part no. 45 20 561)
    - Magnetic wand (part no. 45 44 101)

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- use of the following accessories for transmitters type XTR 0*0*:
  - use of the following accessories for DrägerSensor IR:
    - Splash guard (part-no. 68 10 796)
    - Calibration adapter (part-no. 68 10 859)
    - Weather guard (part-no. 68 11 135)
    - Gassing-/process adapter (part-no. 68 11 330)
    - Magnetic wand (part-no. 45 44 101)
    - Junction box "Ex d" (part-no. 68 11 161)
    - Junction box "Ex e" (part-no. 68 11 299)
    - Junction box "Ex e" (part-no. 68 11 159)
- use of the following accessories for transmitters type XTR 0*1*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
  - Process adapter (part no. 68 12 470)
  - Remote calibration adapter DQ (part no. 68 12 480)
- use of the following accessory for transmitters type XTR 0*2*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
- use of the following accessories for transmitters type ETR 0*0*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
  - Sensor test dongle (part no. 83 17 619)
  - Diagnostic dongle (part no. 83 17 860)

The EU-type examination includes the following deviations from the operating conditions required by EN 60079-29-1:

- Extended range of temperature at operation: -40 °C to +70 °C (with relay module)
-40 °C to +77 °C (ITR 0*1* und ITR 0*2*; without relay module)
-40 °C to +65 °C (XTR 0*0*)
-40 °C to +80 °C (XTR 0*1* and XTR 0*2*; without relay module)
-40 °C to +85 °C (Polytron SE Ex LC M1/2 DD)
- Extended range of ambient pressure: 70 kPa to 130 kPa
- Extended range of humidity of the measured gas: 0 % RH to 95 % RH (ITR 0*1*, ITR 0*2*, and XTR 0*0*)
5 % RH to 95 % RH (XTR 0*1* and XTR 0*2*)

The EU-type examination includes the following deviations from the operating conditions required by EN 50104:

- Extended range of temperature at operation: -40 °C to +65 °C (DrägerSensor O_2 LS)
- Deviating range of temperature at operation: 0 °C to +55 °C (DrägerSensor O_2)
- Extended range of ambient pressure: 70 kPa to 130 kPa
- Extended range of humidity of the measured gas: 5 % RH to 95 % RH (DrägerSensor O_2 LS)
10 % RH to 95 % RH (DrägerSensor O_2)

16 Test report

PFG-no. 41300313P NIX of 2020-02-04
EU-type examination certificate PTB 11 ATEX 1005 X Ausgabe 01 of 2017-05-10

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17 Special Conditions for Use

- see EU-type examination certificate PTB 11 ATEX 1005 X Ausgabe 01
- If operated with a relay module:
  - The main alarm shall be configured "latching" and "non-acknowledgeable" or "pre-acknowledgeable".
  - The pre-alarm shall only be configured "acknowledgeable" if it is used for operation of an acoustic alarm device.
- For transmitters types ITR 0*1* and ITR 0*2*:
  - see EU-type examination certificate BVS 08 ATEX G 001 X
- For transmitters type XTR 0*0*:
  - see 9th supplement to the EU-type examination certificate BVS 05 ATEX E 143 X
- For transmitters type XTR 0*1*:
  - When exposed to a directed flow of air mixed with gas, the measured values can be increased by up to 32 %.
  - When operated with the remote calibration adapter DQ the measured values can be increased by up to 70 %.
- For transmitters type XTR 0*2*:
  - Operate the transmitter when connected to a control unit that has a latching over-range indication. Do not use internal alarm relays of the transmitter.
  - When exposed to a directed flow of air mixed with gas, the measured values can be increased by up to 32 %.
  - Adjust the transmitter with the sensor in its operational orientation.
  - False alarms can occur during warming up of the sensor.
- For transmitters type ETR 0*0*:
  - The response time t_{20} can exceed the limit of EN 50104 for small concentration changes.

18 Essential Health and Safety Requirements

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are covered by the standards listed under item 9.

19 Drawings and Documents

Drawings and documents are listed in the confidential test report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, dated 2020-02-04

Managing Director

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Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 11 ATEX 1005 X **Issue: 4**

(4) Product: Gas detection transmitters ETR/ITR/XTR/RCU 0***, EAC 01**

(5) Manufacturer: Dräger Safety AG & Co. KGaA

(6) Address: Revalstraße 1, 23560 Lübeck, Germany

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

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the 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 the confidential Test Report PTB Ex 22-21212.

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

EN IEC 60079-0:2018+AC:2020, EN 60079-1:2014+AC:2018,
EN IEC 60079-7:2015+A1:2018, EN 60079-11:2012, EN 60079-31:2014

(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 in accordance to the Directive 2014/34/EU. 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 2 G Ex db IIC T6...T4 Gb	**bzw.**
II 2 G Ex db ia IIC T6...T4 Gb	**bzw.**
II 2 G Ex db eb IIC T6...T4 Gb	**bzw.**
II 2 D Ex tb IIIC T80°C...T130°C Db	**bzw.**
II 2 G Ex db eb ia IIC T6...T4 Gb	**bzw.**

ZSEx001e c

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

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Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EU-TYPE EXAMINATION CERTIFICATE

(Translation)

Ex	**II 2 (1) G Ex db [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db ia [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db eb [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db eb ia [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) D Ex tb [ia Da] IIIC T135°C Db**	

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, December 14, 2022
On behalf of PTB:

Dr.-Ing. M. Thedens
Regierungsdirektor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 24

ZSEx001e c

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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 11 ATEX 1005 X, Issue: 4**

(15) Description of Product

The Gas detection transmitters ETR/ITR/XTR/RCU 0***, EAC 01** consist of three different types of sensor and interfaces. The Gas detection transmitter type ETR 0*** uses the electrochemical sensing principle or an ultrasonic sensor with an electrochemical sensor interface, the Gas detection transmitter type ITR 0*** uses the infrared sensing principle and the Gas detection transmitter type XTR 0*** uses the catalytic sensing principle or infrared sensing principle with a catalytic sensor interface. The Gas detection transmitter type RCU 0*** shall only be used with separate certified sensors. The sensor frontend (EC sensing head) of the ETR 0*** series comprises a galvanically separating barrier circuit (inside the flameproof enclosure) and intrinsically safe electronics located out-side the flameproof enclosure as well as an electro-chemical sensor or ultrasonic sensor - all of them being covered by this certificate. The sensors of the ITR 0*** and XTR 0*** series are covered by separate certifications, which are accepted under this certificate.

The internal electronic covers the intrinsically safe fieldbus under consideration of the maximum FISCO input ratings applicable for the operation as both FISCO Field device or alternatively non-intrinsically safe fieldbus PA/FF.

Type code:

***TR 0** * * *
1 2 3 4

1: Sensing principle / sensors
- E = electrochemical
- I = infrared
- X = catalytic

2: Series and enclosure material
- 2 = 02/03 series, aluminium enclosure
- 3 = 02/03 series, stainless steel enclosure
- 4 = 04/05 series, aluminium enclosure
- 5 = 04/05 series, stainless steel enclosure

3: Sensors

ITR 0 * * *

3: Sensors
- 0 = IDS 0001
- 1 = IDS 0101

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2 = IDS 0102
5 = IDS 0105

ETR 0 * * *
3: Sensors
0 = DrägerSensor or DrägerSensor XS with adapter *or DrägerSensor with Gas Generator type EDS 03***
2 = Ultraschall Sensor

XTR 0 * * *
3: Sensors
0 = IDS 0002
1 = XDS 020*
2 = Ex-Sensor LC NPT

4: Interface

0	=	"d", 4-20 mA
1	=	"d", 4-20 mA with Relay
2	=	"d", Modbus RTU
A	=	"d"+"ia", Foundation Fieldbus
B	=	"d"+"ia", Foundation Fieldbus SIF
E	=	"d"+"ia", Profibus
F	=	"d"+"ia", Profisafe
I	=	"d"+"e", 4-20 mA
J	=	"d"+"e", 4-20 mA with Relay
K	=	"d"+"e", Modbus RTU
S	=	"d"+"e"+"ia", Foundation Fieldbus
T	=	"d"+"e"+"ia", Foundation Fieldbus SIF
W	=	"d"+"e"+"ia", Profibus
X	=	"d"+"e"+"ia", Profisafe

Type code for Junction Box, type EAC 01 (Remote Sensor)**

EAC 01 * *
1 2

1: Enclosure Material
0 = Aluminum
1 = Stainless Steel
2: Features not relevant for the type of protection

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

Type code for Remote Box, type RCU 0*

RCU 0 * * *
1 2 3

1: Enclosure Material
2 = Aluminum
3 = Stainless Steel
2: Features not relevant for the types of protection

3: Interface

0	=	"d", 4-20 mA
1	=	"d", 4-20 mA with Relay
2	=	“d”, Modbus RTU
A	=	"d"+"ia", Foundation Fieldbus
B	=	"d"+"ia", Foundation Fieldbus SIF
E	=	"d"+"ia", Profibus
F	=	"d"+"ia", Profisafe
I	=	"d"+"e", 4-20 mA
J	=	"d"+"e", 4-20 mA with Relay
K	=	"d"+"e", Modbus RTU
S	=	"d"+"e"+"ia", Foundation Fieldbus
T	=	"d"+"e"+"ia", Foundation Fieldbus SIF
W	=	"d"+"e"+"ia", Profibus
X	=	"d"+"e"+"ia", Profisafe

The relation between ambient temperature and the assigned temperature class is as follows:

Type	Ambient temperature range	Temperature class (Gas)	Temperature class (dust)
ITR 0*0* RCU 0*** XTR 0*0*	-40 °C to +65 °C	T4	T130°C
All other versions	-40 °C to +80 °C	T4	T130°C
All versions	-40 °C to +40 °C	T6	T80°C
ETR 02/032* ETR 04/052*	-40 °C to +70 °C	T4	T135°C
ETR 02/030* ETR 04/050*	-40 °C to +70 °C	T4	T135°C
ETR 02/030* ETR 04/050*	-40 °C to +40 °C	T6	T135°C

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

Electrical Ratings:

Maximum supply wattage: P_{max}: 5 W

Supply:

ETR 02/03** series	10...30 VDC, 0.08...0.15 A
ITR 02/03** series	10...30 VDC, 0.1...0.75 A
XTR 02/03** series	10...30 VDC, 0.1...0.2 A
ETR 04/05** series	10...30 VDC, 0.1...0.35 A
ITR 04/05** series	10...30 VDC, 0.3...1.0 A
RCU 02/03** series	10...30 VDC, 0.3...1.0 A
XTR 04/05** series	10...30 VDC, 0.15...0.45 A
Relay	5A, 30 VDC or 230 VAC

Fieldbus circuit:
Field device as Fieldbus system in type of protection Intrinsic Safety Ex ia IIC; FISCO in acc. of IEC 60079-11, using only for the interface type A; B; E; F; S; T; W and X
or
Field device as Fieldbus system (non-intrinsically safe) using only for the interface type 2 and K
Electrical data: Maximum values:

Model	Voltage, Ui [VDC]	Current, Ii [mA]	Power, Pi [mW]
ETR 04*(*) ETR 05*(*) ITR 04*(*) ITR 05*(*) RCU 02*(*) RCU 03*(*) XTR 04*(*) XTR 05*(*)	17.5	380	5320

For the Gas detection transmitters series ETR ****
Sensor circuit: in type of protection Intrinsic safety Ex ia IIC / IIIC;
only for connecting Dräger Sensor or XS with adapter or
ultrasonic sensor or DraegerSensor with electrochemical sensor
type EDS 03**

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In case of dispute, the German text shall prevail.

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

(16) Test Report PTB Ex22-21212

(17) Specific conditions of use

The circuits are limited to overvoltage category I/II/III (non mains/mains circuits) as defined in IEC 60664-1 for FISCO field device operation.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. M. Thedens
Regierungsdirektor

Braunschweig, December 14, 2022

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

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ITEM	Tag	950-GDZ-03109 : O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)	Module	UD	
TASK	code	C10001542	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.**		ARTA-4689			
Manufacturer	Dräger			**Model**		Polytron 8100 EC d S 4-20/Hart - (ETR 0500)			
Cert No.	PTB 11 ATEX 1005X (TR)			**Equipment Ambient Temp.**		-40°C<T<+40°			
Area Classification	hazardous	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex db [ia Ga]	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP65/66/67

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	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	PL	
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	NA	
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	PL	

ITEM	Tag	950-GDZ-03109	: O2 DET. FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001542	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		PL	
	Physical check	x	PL	
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	See PL C30002156
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	PL	
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	OK	
	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	950-GDZ-03109	: O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10001542	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

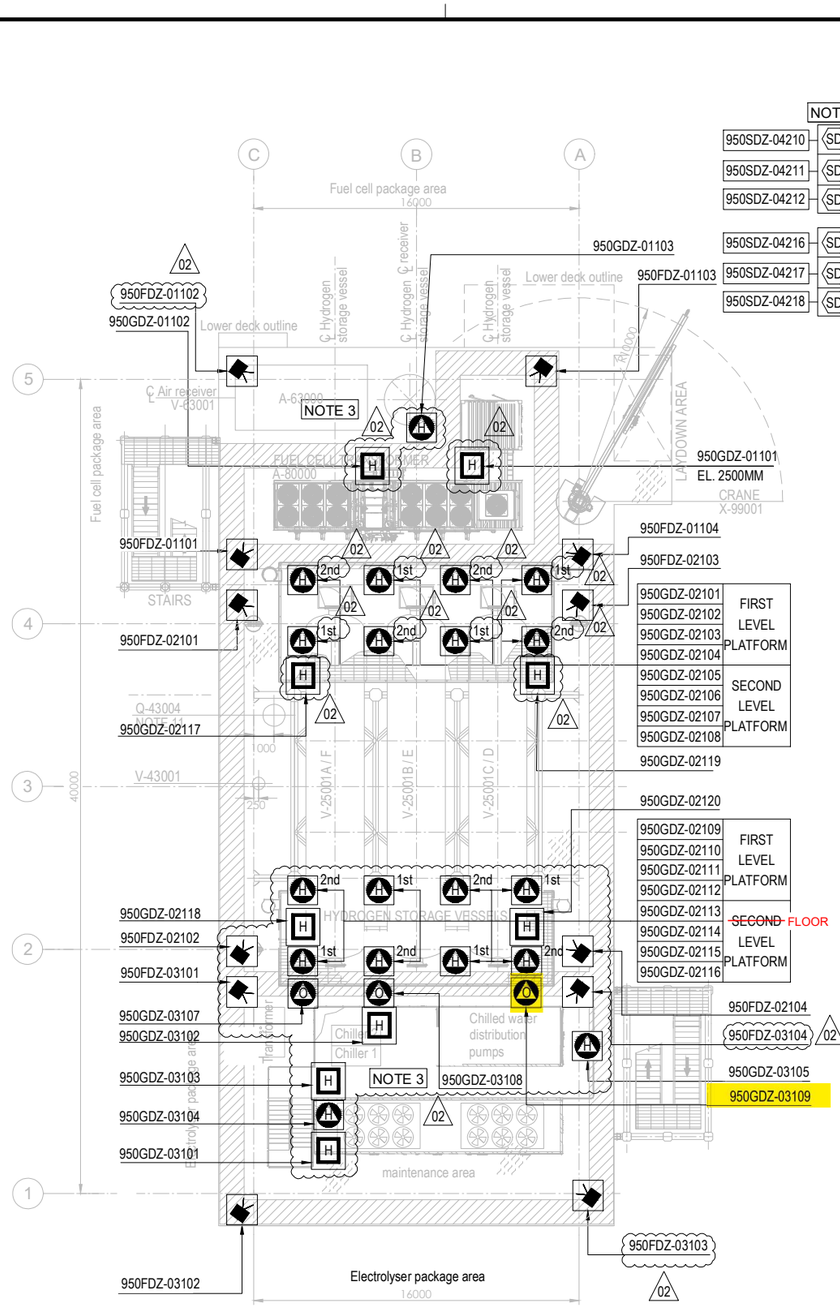
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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	2025-01-08	2025-01-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-08T10:01:29.804Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-10T12:32:38.389Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



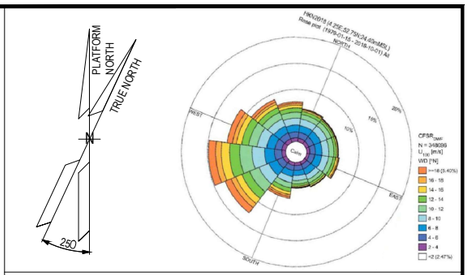
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

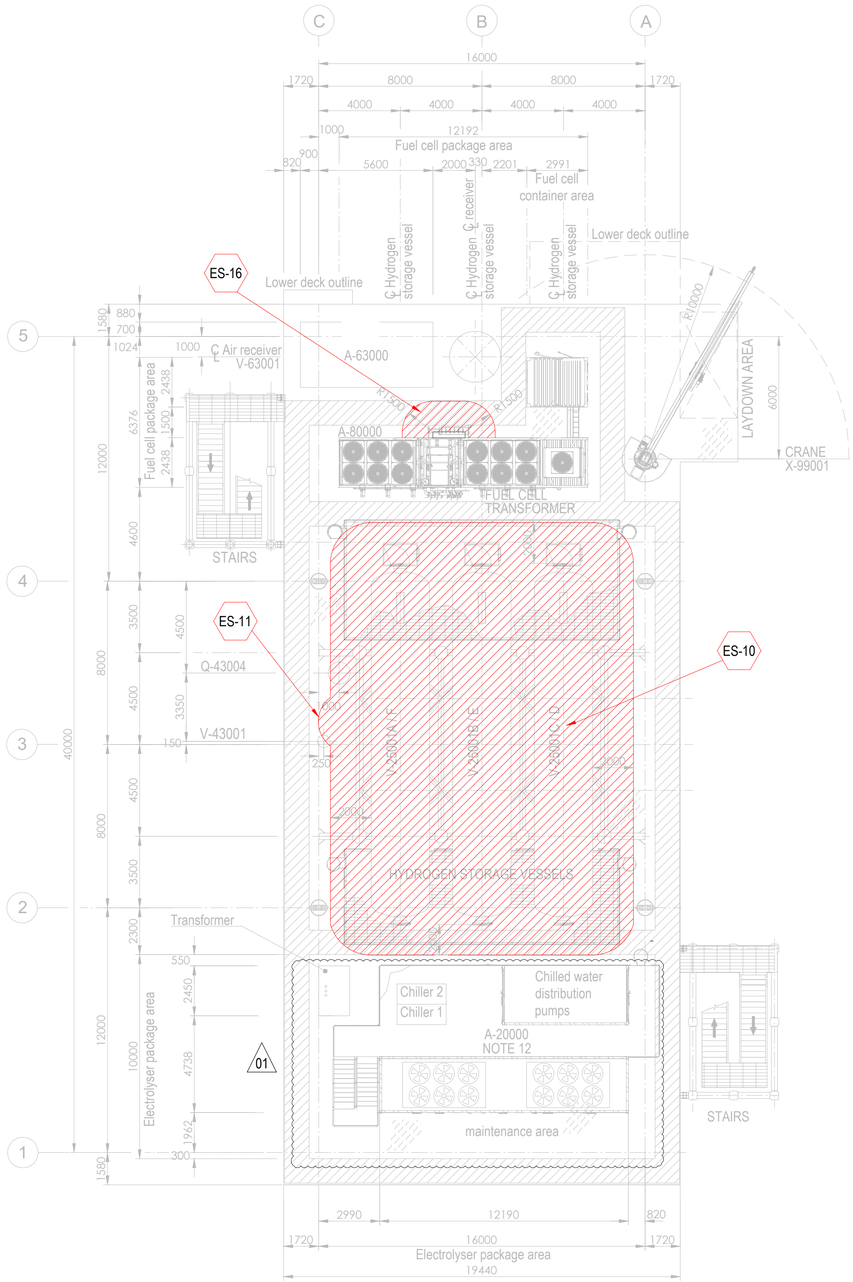
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

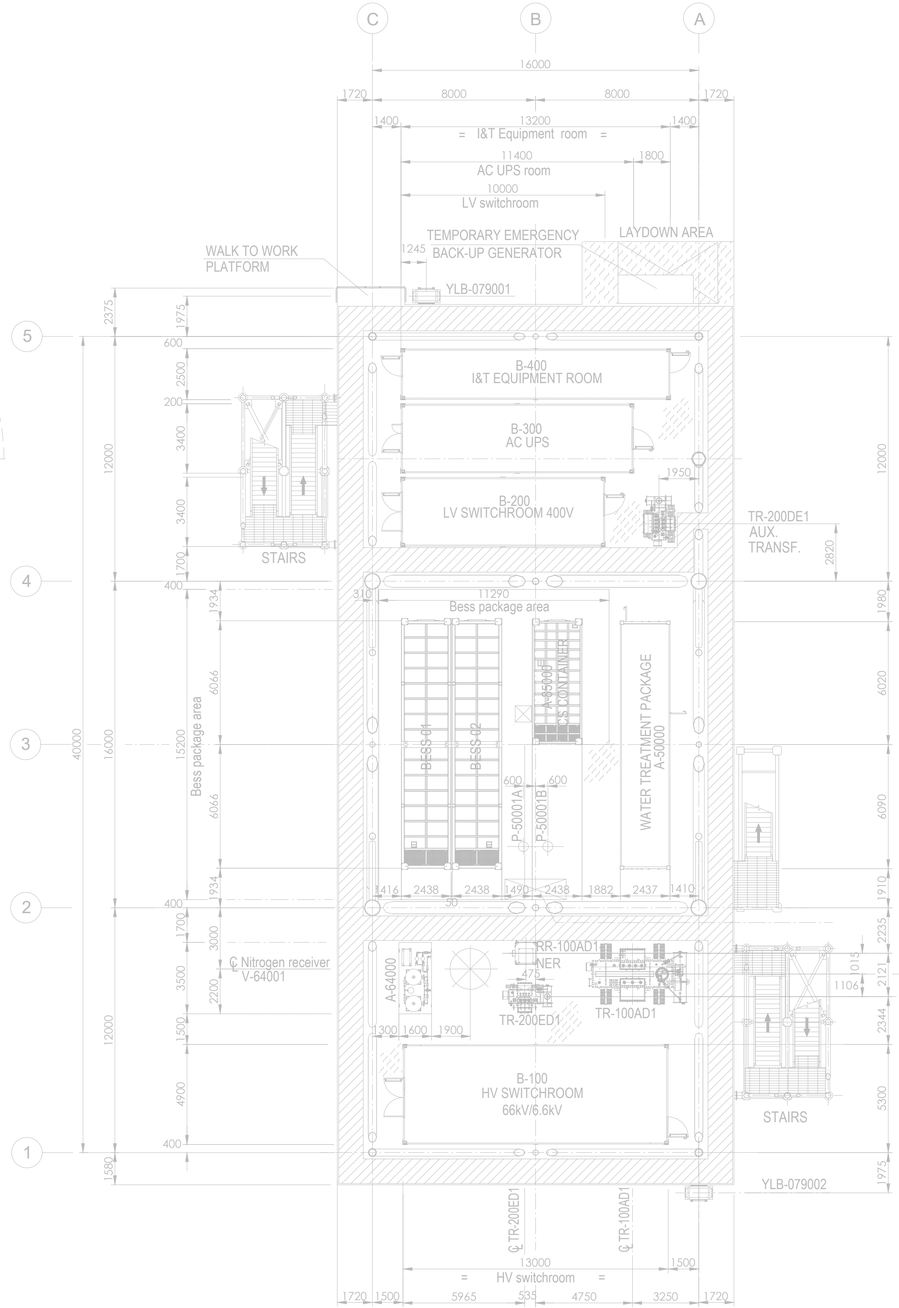
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 01



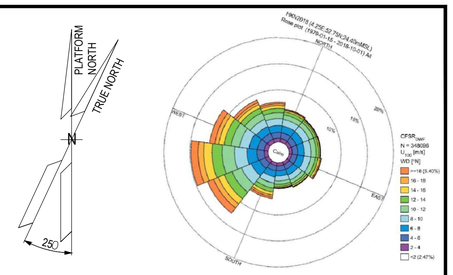
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

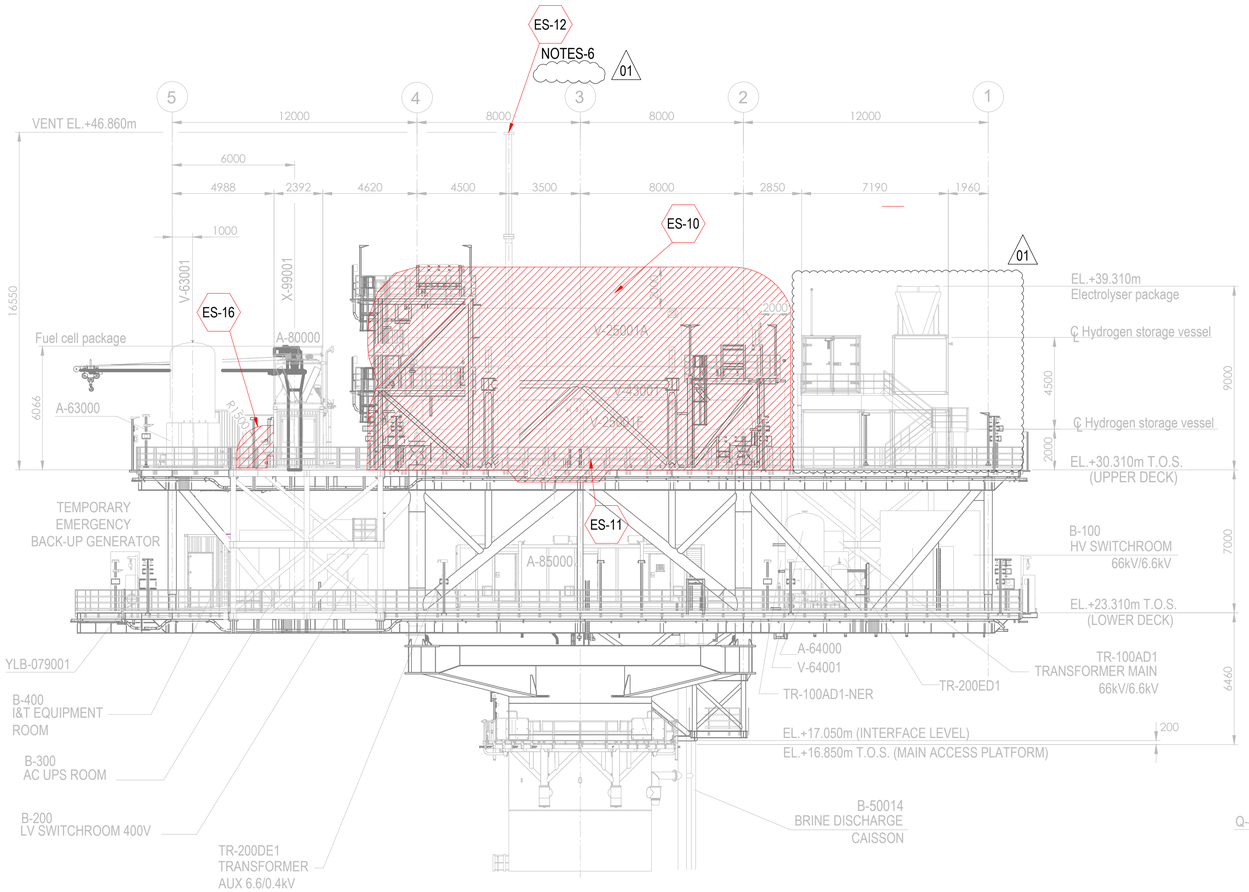
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

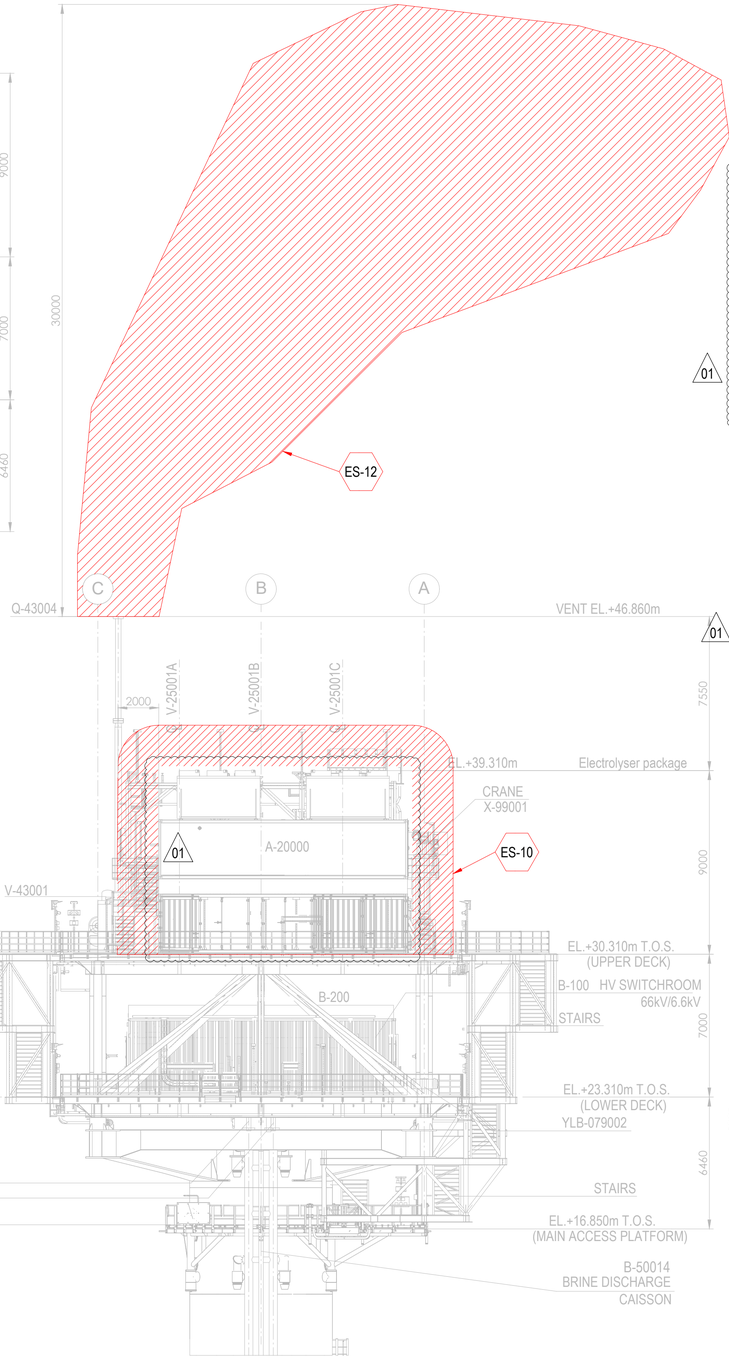
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



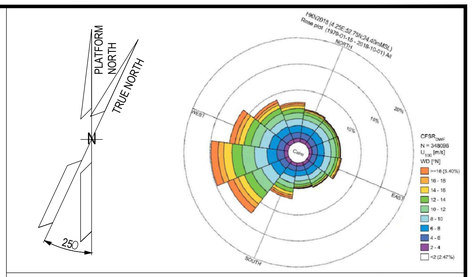
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS		JUNCTION BOX 950-JE-03101		MULTICABLE No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003	
		TB-1			TB-950-JE-03101	
950-GDZ-03101 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	1 RD, 2 WH, 3 BK	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TR1 RD 1, WH 2, BK 3	950-GDZ-03101
950-GDZ-03102 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	SH, 4 RD, 5 WH, 6 BK		TR2 RD 4, WH 5, BK 6	950-GDZ-03102
950-GDZ-03103 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	SH, 7 RD, 8 WH, 9 BK		TR3 RD 7, WH 8, BK 9	950-GDZ-03103
950-GDZ-03104 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	SH, 10 RD, 11 WH, 12 BK		TR4 RD 10, WH 11, BK 12	950-GDZ-03104
950-GDZ-03105 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	SH, 13 RD, 14 WH, 15 BK		TR5 RD 13, WH 14, BK 15	950-GDZ-03105
950-GDZ-03107 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	SH, 16 RD, 17 WH, 18 BK		TR6 RD 16, WH 17, BK 18	950-GDZ-03107
950-GDZ-03108 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	SH, 19 RD, 20 WH, 21 BK		TR7 RD 19, WH 20, BK 21	950-GDZ-03108
950-GDZ-03109 PWR+ RD, 4-20mA WH, PWR- BK	NOTE-2	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	SH, 22 RD, 23 WH, 24 BK		TR8 RD 22, WH 23, BK 24	950-GDZ-03109
			SH, SPARE 25 RD, 26 WH, 27 BK		TR9 RD 25, WH 26, BK 27	SPARE
			SH, SPARE 28 RD, 29 WH, 30 BK		TR10 RD 28, WH 29, BK 30	SPARE
			SH, SPARE 31 RD, 32 WH, 33 BK		TR11 RD 31, WH 32, BK 33	SPARE
			SH, SPARE 34 RD, 35 WH, 36 BK		TR12 RD 34, WH 35, ~~BK~~ 36	SPARE
			SH, OS		Shield Bar, I.E.	

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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

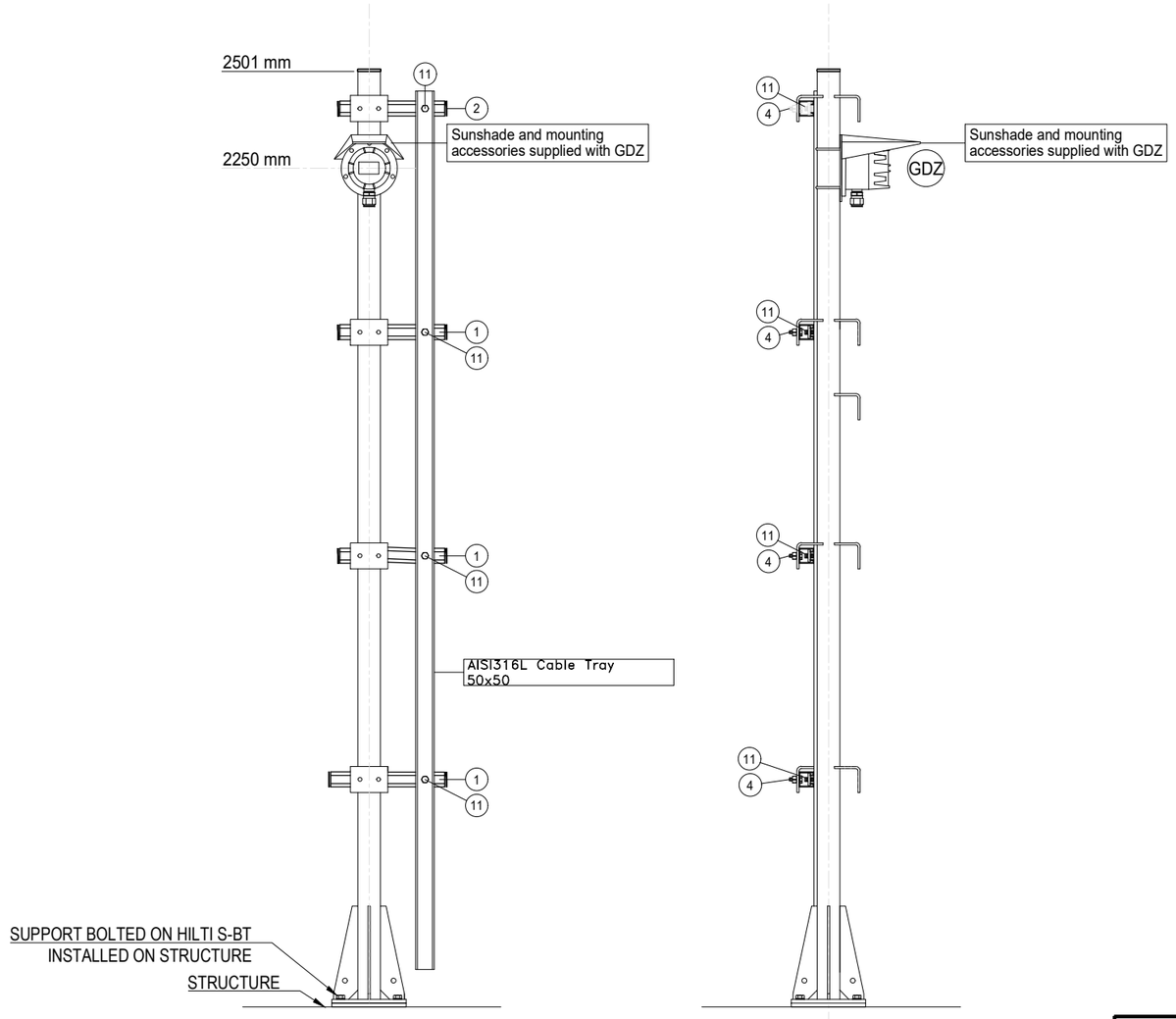
A3	DRAWING NO. 123A90-DDL-IN-DG-40016	SHEET 036	REV. 01

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

FGS-11

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	2m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	8
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

1

POLE	ITEM	DESCRIPTION	TAGNAME
1	GDZ	O2 GAS DETECTOR - CAT TYPE	950-GDZ-03107
2	GDZ	O2 GAS DETECTOR - CAT TYPE	~~950-GDZ-03108~~ 950-GDZ-03102
3	GDZ	O2 GAS DETECTOR - CAT TYPE	950-GDZ-03109

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

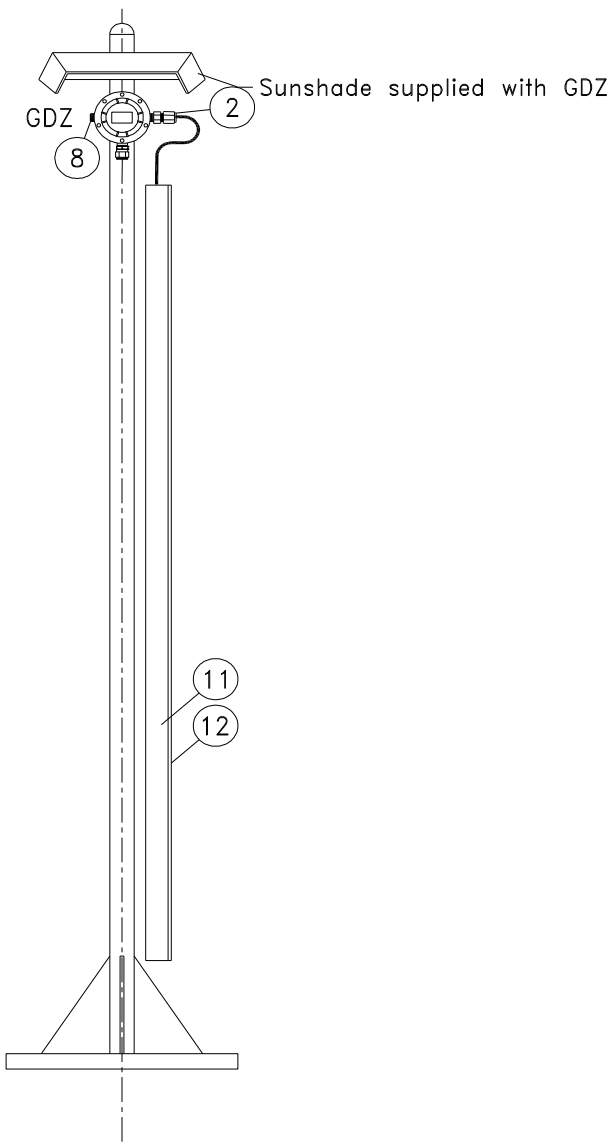
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 030	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02111
10	950-GDZ-03104
11	950-GDZ-03105
12	950-GDZ-03106
13	950-GDZ-03107
14	~~950-GDZ-03108~~ 950-GDZ-03102
15	950-GDZ-03109
16	950-GDZ-02117
17	950-GDZ-02119
18	950-GDZ-02120
19	950-GDZ-01101
20	950-GDZ-01102
21	950-GDZ-01103
22	950-GDZ-03101
23	950-GDZ-03103

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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

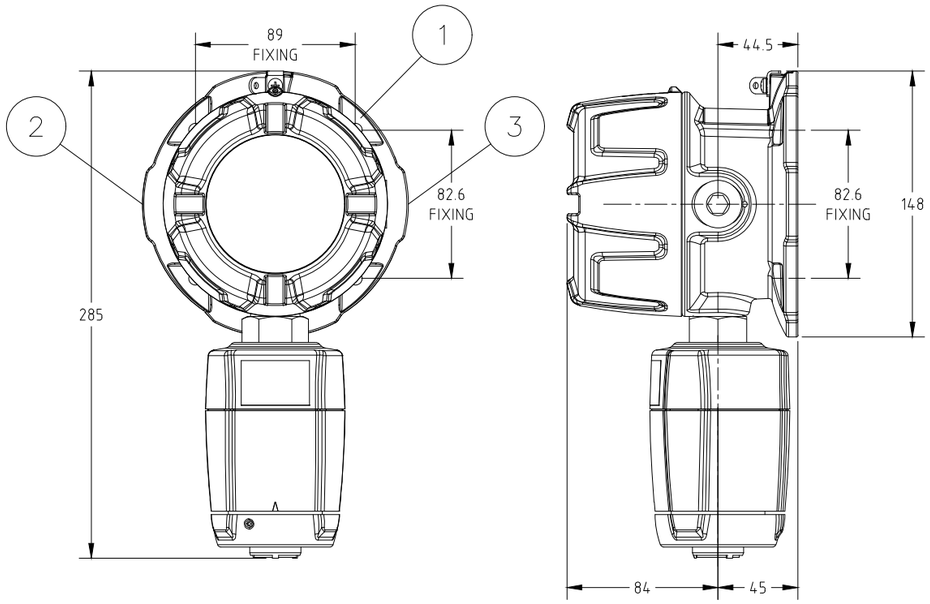
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

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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OXYGEN POINT DETECTOR / PIPE MOUNTING



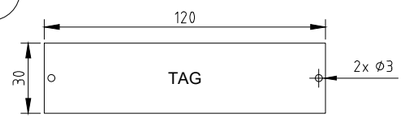
ITEM	DESCRIPTIONS	NR
1	Oxygen Point Detector, DRÄGER Polytron 8100 EC d S 4-20/HART	1
2	Reducer 3/4" NPT - M20 Ex d AISI 316	2
3	3/4" plug Ex d AISI 316	1
4	Pipe mount bracket kit Polytron 5000/8000 series, DRÄGER	1
5	Sun and weather protection kit Polytron, DRÄGER	1
6	Stainless Steel Name Plate	1
7		
8		
9		
10		

INSTALLATION
QUANTITY

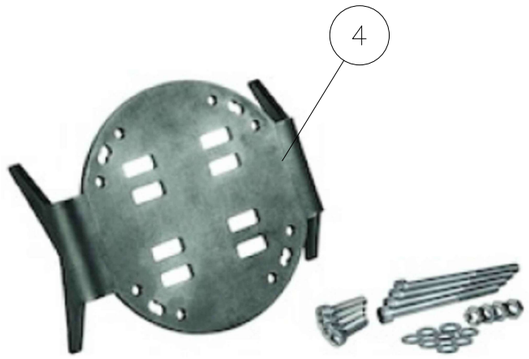
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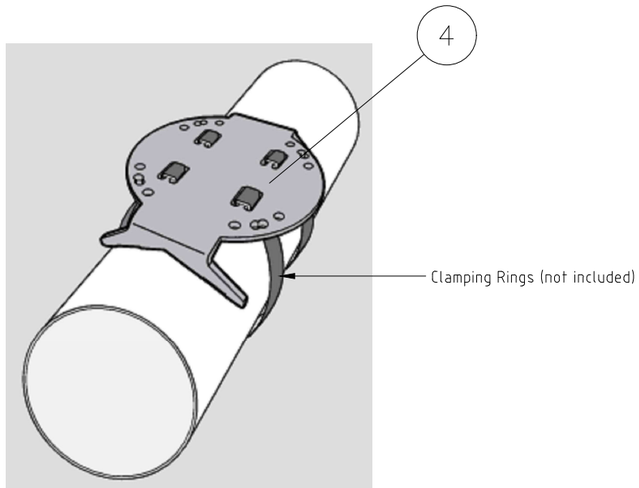
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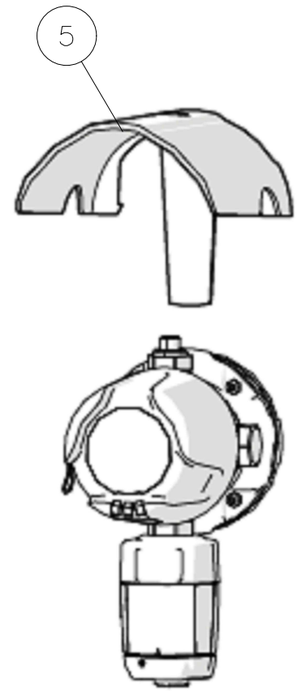
STAINLESS STEEL
NAME PLATE DETAILS



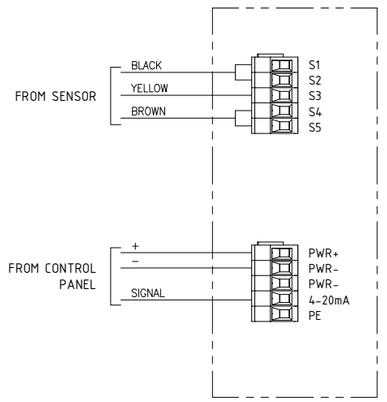
NOTE 5







WIRING



FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
OXYGEN POINT DETECTOR / PIPE MOUNTING

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 011

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

OXYGEN POINT DETECTOR / PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-GDZ-03107
2	950-GDZ-03108
3	950-GDZ-03109

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
OXYGEN POINT DETECTOR / PIPE MOUNTING – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 012

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

OXYGEN POINT DETECTORS

POS.	TAG NUMBER	SERVICE
1	950-GDZ-03107	O2 DET. FZ-03 ELECTROLYZER PK AREA
2	950-GDZ-03108	O2 DET. FZ-03 ELECTROLYZER PK AREA
3	950-GDZ-03109	O2 DET. FZ-03 ELECTROLYZER PK AREA

File: 1724000821-IN-DS-00004-02.xlsx
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Dräger Polytron® 8100 EC
Detector for toxic gases and oxygen

The Polytron® 8100 EC is Dräger's top of the line explosion-proof transmitter for the detection of toxic gases or oxygen. It uses a high performance plug and play electrochemical DrägerSensor to detect a specific gas. Besides having a 3-wire 4 to 20 mA analog output with relays, it also offers HART®, Modbus and Fieldbus protocol, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Durable, intelligent and sensitive – the DrägerSensor®

With unique electrochemical DrägerSensors, Polytron 8100 can detect over 100 toxic gases and oxygen. These long life sensors provide continuous detection even under the harshest conditions. DrägerSensors offer the industry's widest temperature and humidity range between -40 °C to +65 °C (-40 °F to +150 °F). The built-in memory contains all calibration and configuration information: therefore the sensor ships pre calibrated and is ready for immediate operation. An intelligent sensor self-test function allows for predictive maintenance. The intrinsically safe connection of the sensor eliminates the need for a flame arrestor, giving you faster response times and higher sensitivity.

Easy device management via digital communication

The Dräger Polytron 8100 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces with PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8100 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information. The Polytron 8100 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8100 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8100 features a Class I, Div. 1 rated explosion proof enclosure made from epoxy coated aluminium or 316L stainless steel, making it suitable for a wide range of environmental conditions.

Remote sensor option does not require conduit

The remote sensor enclosure allows you to install the sensor separately from the transmitter. This 'external' installation makes it easier to use if the sensor has to be installed in a difficult to access or unfavorable position.

Technical Data

Dräger Polytron® 8100 EC			
Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Toxic gases and oxygen, dependent on the sensor used		
Measuring ranges	Customized adjustment, see sensor data sheet		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	see sensor datasheet		
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	w/o relay, non-remote	80 mA at 24 V
		w/ relay, remote	100 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 65 °C (-40 to 149 °F) without relay	
		-40 to 65 °C (-40 to 149 °F) with relay	
	Pressure	20.7 to 38.4 inch Hg / 700 to 1,300 mbar	
	Humidity	0 to 100 % r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Polyamide	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D), approx.		11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm
	Weight, approx.	Aluminium	6.6 lbs / 3.0 kg
		SS316 L	11.0 lbs / 5.0 kg
Approvals	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	FM Performance (H_2S sensor)	Certificate No: FM16NUS0015	
		FM 6340:2014, FM Class 3810:2005,	
		ISA–92.00.01-2010	
	CE marking	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Marine approvals	DNV GL, ABS, LR, CSS, RMRS	
	MED approval	Certificate no. MEDB0000411	
	DEKRA Performance approval (for O_2 sensors only)	Certificate no. BVS 13 ATEX G 001 X	
		EN 60079-29-16:2016	
	SIL 2 certified by TUEV Sued	Certificate no. Z10 053474 0023	

Ordering Information

Dräger Polytron® 8100 EC	Approval Code	Order Number
Dräger Polytron® 8100 EC d A 4-20/HART®	ETR 0400	83 44 403
Dräger Polytron® 8100 EC d A 4-20/HART® relay	ETR 0401	83 44 404
Dräger Polytron® 8100 EC d S 4-20/HART®	ETR 0500	83 44 412
Dräger Polytron® 8100 EC d S 4-20/HART® relay	ETR 0501	83 44 413
Dräger Polytron® 8xx0 Custom Configuration, e.g. Modbus – visit www.draeger.com/polytron to configure yours		83 44 800

Electrochemical DrägerSensors	Order Number
DrägerSensor® AC	68 10 595
Initial Operation Set for DrägerSensor AC	68 09 381
DrägerSensor® Cl_2	68 09 665
DrägerSensor® $COCl_2$	68 09 930
DrägerSensor® CO	68 09 605
DrägerSensor® CO LS	68 09 620
DrägerSensor® CO LH	68 12 570
DrägerSensor® H_2	68 09 685
DrägerSensor® H_2O_2 HC	68 09 675
DrägerSensor® H_2O_2 LC	68 09 705
DrägerSensor® H_2S LC	68 09 610
DrägerSensor® H_2S HC	68 09 710
DrägerSensor® H_2S	68 10 435
DrägerSensor® HCl	68 09 640
DrägerSensor® HCN	68 09 650
DrägerSensor® HCN LC	68 13 200
DrägerSensor® Hydrides	68 09 635
DrägerSensor® Hydrides SC	68 09 980
DrägerSensor® PH_3/AsH_3	68 09 695
DrägerSensor® Hydrazine	68 10 180
DrägerSensor® NH_3 LC	68 09 680
DrägerSensor® NH_3 HC	68 09 645
DrägerSensor® NH_3 TL	68 13 095
DrägerSensor® NH_3 FL	68 13 260
DrägerSensor® NO LC	68 09 625
DrägerSensor® NO_2	68 09 655
DrägerSensor® NO_2 LC	68 13 205
DrägerSensor® O_3	68 14 005
DrägerSensor® O_2 LS	68 09 630
DrägerSensor® OV1	68 10 740
DrägerSensor® OV2	68 10 745
DrägerSensor® SO_2	68 09 660

Accessories	Order Number
Magnetic wand	45 44 101
Sensor Test Dongle	83 17 619
Diagnostic Dongle	83 17 860
Pipe mount bracket	45 44 198
Duct mount kit	68 12 725
Duct mount adapter for remote EC sensing head	83 17 617
Remote adapter RS stainless steel	83 23 404

Ordering Information

IR Connection Kit Polytron® 5000/8000			45 44 197
PolySoft licence (1 year)			83 28 639
PolySoft licence (subscription)			83 28 640
EC Sensing Head Remote w/ mount kit			68 12 684
Connection cable w/ plug for		16 ft / 5 m	83 23 305
Remote EC Sensing Head		49 ft / 15 m	83 23 315
		98 ft / 30 m	83 23 330
Splash guard			68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx			37 02 198
Calibration adapter FKM Viton®			68 10 536
Gassing adapter		PE incl. tubing	45 09 314
Dust filter (not for Cl_2, HCl, H_2O_2, O_3, N_2H_4)			68 09 595
Dust filter (SO_2)			68 12 224
Selective filter A2F (CO, CO LS, H_2)			68 09 684
Selective filter K2F ($COCl_2$)			68 09 933
Selective filter NF (HCl)			68 09 643
Selective filter HSF (Hydrides)			68 09 862
Selective filter D3F (CO)			68 12 435
Selective filter MF (PH_3, AsH_3)			68 09 638
Selective filter K1F (SO_2)			68 09 663

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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
950-GDZ-02111	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1618	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02112	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2192	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02113	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2207	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02114	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2200	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02115	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1615	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02116	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTC-2208	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02117	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1682	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02118	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1676	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02119	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1684	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-02120	FZ-02 H2 detect. in hydrogen storage vessels area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1687	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03101	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1688	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03102	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1683	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03103	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-1681	Polytron® 8900 UGLD d S 4-20/HART® Relay	II 2 G	PTB 11 ATEX 1005X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03104	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1624	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03105	FZ-03 H2 detect. in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTB-1630	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03107	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4693	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03108	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4680	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-03109	FZ-03 Oxygen in electrolyzer package area	LOWER DECK	1724000821	Fores	Dräger	ARTA-4689	Polytron 8100 EC d S 4-20/Hart	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04201	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1611	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04202	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1625	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04203	FZ-04 H2 detect. in B-400 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1631	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04204	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTC-2205	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04205	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTC-2202	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04206	FZ-04 H2 detect. in B-400 I&T equip. room	LOWER DECK	1724000821	Fores	Dräger	ARTB-1613	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04207	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1635	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04208	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-0199	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04209	FZ-04 H2 detect. in B-300 HVAC air intake	LOWER DECK	1724000821	Fores	Dräger	ARTB-1633	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	
950-GDZ-04210	FZ-04 H2 detect. in B-300 AC UPS room	LOWER DECK	1724000821	Fores	Dräger	ARTB-1619	Polytron® 8200 CAT DQ d S 4-20/HART®	II 2 G	PTB 11 ATEX 1005X (TR) BVS 13 ATEX G 001X (TR) DEMKO 09 ATEX 0924202X (SENSOR) CML 18ATEX 1320X (REDUCTION)	1724000821-COM-LIS-00011	II 2G Ex-d IIC T1	-	N/A	True	N/A	True	

Translation

1 EU-Type Examination Certificate Supplement 08

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

2 **Device with a measuring function for explosion protection Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 13 ATEX G 001 X**

4 Product: **Transmitters types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052*, ETR 040*, ETR 050***

5 Manufacturer: **Dräger Safety AG & Co. KGaA**

6 Address: **Revalstraße 1, 23560 Lübeck, Germany**

7 This supplementary certificate extends EU-Type Examination Certificate No. BVS 13 ATEX G 001 X to apply to products designed and constructed in accordance with the specification set out in the Annex of the said certificate but having any variations specified in the Annex attached to this certificate and the documents therein referred to.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, 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 the confidential test report PFG-no. 41300313P NIX.

9 Compliance with the Essential Health and Safety Requirements with respect to the measuring function for explosion protection has been assured by compliance with:

EN 60079-29-1:2007
EN 60079-29-1:2016
EN 50104:2010
EN 50271:2010
EN 50271:2018

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix 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:

see PTB 11 ATEX 1005 X Ausgabe 01

DEKRA Testing and Certification GmbH
Bochum, 2020-02-04

Signed: Kilisch
Managing Director

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13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 13 ATEX G 001 X
Supplement 08

15 **Product description**

15.1 **Subject and type**

Transmitter types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052*, ETR 040*, ETR 050*

Coding of type:		(1)TR 0(2)(3)(4)
(1)	E, I or X	Sensor interface: infrared (I) or catalytic (X)
(2)	4 or 5	Material of housing: aluminium (4) or stainless steel (5)
(3)		internal sensor:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or XDS 0200 (1) or Ex-Sensor LC NPT (2)
		external sensor with junction box EAC 01**:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or XDS 0200 (1) or Ex-Sensor LC NPT (2)
		external sensor with other junction boxes:
	1 or 2	for ITR: IDS 0101 (1) or IDS 0102 (2) or IDS 0111 (1) or IDS 0112 (2)
	0,1 or 2	for XTR: IDS 0002 (0) or IDS 0012 (0) or Polytron SE Ex PR M* DQ (1) or Polytron SE Ex PR NPT1 DQ (1) or Polytron SE Ex HT M DQ (1) or Polytron SE Ex LC M1/2 DD (2)
	0	DrägerSensor (internal sensor only) for ETR 0*0*
(4)	0, 1, I, J	interface: "d", 4-20 mA (0) or "d", 4-20 mA with relays (1) or "d"+"e", 4-20 mA (I) or "d"+"e", 4-20 mA with relays (J)

15.2 **Description**

Reason for the supplement:
Modification of the software of the transmitter and re-testing of types ITR 041*, ITR 051*, ITR 042* and ITR 052* according to EN 60079-29-1:2016 and EN 50271:2018.
The test according to EN 50271:2018 concerns only transmitters types XTR 0*1*, XTR 0*2*, ETR 0*0*, ITR 041*, ITR 051*, ITR 042* and ITR 052*. The test according to EN 60079-29-1:2016 concerns only transmitters types XTR 0*1*, XTR 0*2*, ITR 041*, ITR 051*, ITR 042* and ITR 052*.

Description of Product

The transmitters ITR 0*1* (Polytron 8700 with sensor Dräger PIR 7000 type 334), ITR 0*2* (Polytron 8700 with sensor Dräger PIR 7000 type 340), XTR 0*0* (Polytron 8310 with Dräger Sensor IR) and XTR 0*1* (Polytron 8200 with DrägerSensor PR M DQ, HT M DQ or PR NPT DQ) are fixed equipment for the measurement of flammable gases and vapours mixed with air at volume fractions up to the lower explosive limit. The transmitters XTR 0*2* (Polytron 8200 with Ex-sensor LC M or LC NPT) are fixed equipment for the measurement of flammable gases and vapours mixed with air at volume fractions up to 10 % of the lower explosive limit. The sensor may be directly connected to the transmitter housing or operated as remote sensor.
The transmitters type ETR 0*0* (Polytron 8100 with DrägerSensor O_2 or DrägerSensor O_2 LS) are fixed equipment for the measurement of oxygen. The sensor is directly fitted to the transmitter housing. Operation with a remote sensor is not subject of this supplement to the EU-type examination certificate.
A 4-20 mA interface serves for transmission of the measured value to a control unit.
The transmitters can be equipped with a relay module that provides two alarm relays and one fault relay.

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15.3 **Parameters**

see PTB 11 ATEX 1005 X Ausgabe 01

15.4 **Measuring function for explosion protection**

This EU-type examination certificate covers:

- transmitters types ITR 041*, ITR 051*, ITR 042*, ITR 052*, XTR 040*, XTR 050*, XTR 041*, XTR 051*, XTR 042*, XTR 052* with software version 3.1.0 and transmitters types ETR 040* and ETR 050* with software version 3.1.0 (main) and 5 (SIOS)
- for transmitters types ITR 0*1* and ITR 0*2* (infrared sensor) the measuring function for those gases and vapours which are listed in the instruction manual with reference to the EU-type examination certificate BVS 08 ATEX G 001 X
- for transmitters type XTR 0*0* (infrared sensor) when operated in gas category methane the measuring function for methane in the measuring range 0 - 100 % LEL, when operated in gas category propane the measuring function for propane, i-butane, n-butane, n-pentane, n-hexane, n-octane, n-nonane and i-propanol in the measuring range 0 - 100 % LEL and ethanol and ethyl acetate in the measuring range 0 - 70 % LEL, and when operated in gas category ethylene the measuring function for ethylene, propylene, toluene, acetone and ethyl acetate in the measuring range 0 - 100 % LEL and methanol in the measuring range 0 - 70 % LEL
- for transmitters type XTR 0*1* (catalytic combustion sensor) the measuring function for methane, propane, acetone, acetylene, ammonia, special boiling point spirit 65/95, benzene, 1,3-butadiene, n-butane, 2-butanone, n-butyl acetate, diethyl ether, dimethyl ether, acetic acid, ethanol, ethylene, ethyl acetate, ethylene oxide, n-hexane, methanol, methyl methacrylate, n-octane, n-pentane, 2-propanol, propylene, propylene oxide, n-nonane, toluene, o-xylene and hydrogen in the measuring range 0 - 100 % LEL
- for transmitters type XTR 0*2* (catalytic combustion sensor) the measuring function for methane, propane, ethylene, acetylene, propylene, i-butylene, benzene, n-nonane and hydrogen in the measuring range 0 - 10 % LEL
- for transmitters type ETR 0*0* (electrochemical sensor) the measuring function for oxygen (measurement of inertisation) in the measuring range 0 - 5...25 % O_2
- use of the following outputs for safety relevant purposes:
  - display
  - 4-20 mA output for measured values
  - relays
- use of the following accessories for transmitters types ITR 0*1* and ITR 0*2*:
  - Spacer (part no. 6812617)
  - use of the following accessories for sensor PIR 7000:
    - Mounting set PIR 7000 (part no. 68 11 648)
    - Splash guard PIR 7000 (part no. 68 11 911)
    - Insect guard PIR 7000 (part no. 68 11 609)
    - Hydrophobic filter PIR 7000 (part no. 68 11 890)
    - Calibration adapter PIR 7000 (part no. 68 11 610)
    - Status indicator PIR 7000 (part no. 68 11 625)
    - Flowcell PIR 7000 (part no. 68 11 490)
    - Bump test adapter PIR 7000 (part no. 68 11 630)
    - Process adapter PIR 7000 (part no. 68 11 915)
    - Prozess cuvette PIR 7000 (part no. 68 11 415)
    - Prozess cuvette PIR 7000 SGR (part no. 68 13 219)
    - Junction box Ex e (part no. 68 11 898)
    - Junction boxes Ex d (part no. 45 20 561)
    - Magnetic wand (part no. 45 44 101)

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- use of the following accessories for transmitters type XTR 0*0*:
  - use of the following accessories for DrägerSensor IR:
    - Splash guard (part-no. 68 10 796)
    - Calibration adapter (part-no. 68 10 859)
    - Weather guard (part-no. 68 11 135)
    - Gassing-/process adapter (part-no. 68 11 330)
    - Magnetic wand (part-no. 45 44 101)
    - Junction box "Ex d" (part-no. 68 11 161)
    - Junction box "Ex e" (part-no. 68 11 299)
    - Junction box "Ex e" (part-no. 68 11 159)
- use of the following accessories for transmitters type XTR 0*1*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
  - Process adapter (part no. 68 12 470)
  - Remote calibration adapter DQ (part no. 68 12 480)
- use of the following accessory for transmitters type XTR 0*2*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
- use of the following accessories for transmitters type ETR 0*0*:
  - Calibration adapter PE, Europe (part no. 68 06 978)
  - Sensor test dongle (part no. 83 17 619)
  - Diagnostic dongle (part no. 83 17 860)

The EU-type examination includes the following deviations from the operating conditions required by EN 60079-29-1:

- Extended range of temperature at operation: -40 °C to +70 °C (with relay module)
  -40 °C to +77 °C (ITR 0*1* und ITR 0*2*; without relay module)
  -40 °C to +65 °C (XTR 0*0*)
  -40 °C to +80 °C (XTR 0*1* and XTR 0*2*; without relay module)
  -40 °C to +85 °C (Polytron SE Ex LC M1/2 DD)
- Extended range of ambient pressure: 70 kPa to 130 kPa
- Extended range of humidity of the measured gas: 0 % RH to 95 % RH (ITR 0*1*, ITR 0*2*, and XTR 0*0*)
  5 % RH to 95 % RH (XTR 0*1* and XTR 0*2*)

The EU-type examination includes the following deviations from the operating conditions required by EN 50104:

- Extended range of temperature at operation: -40 °C to +65 °C (DrägerSensor O_2 LS)
- Deviating range of temperature at operation: 0 °C to +55 °C (DrägerSensor O_2)
- Extended range of ambient pressure: 70 kPa to 130 kPa
- Extended range of humidity of the measured gas: 5 % RH to 95 % RH (DrägerSensor O_2 LS)
  10 % RH to 95 % RH (DrägerSensor O_2)

16 Test report

PFG-no. 41300313P NIX of 2020-02-04
EU-type examination certificate PTB 11 ATEX 1005 X Ausgabe 01 of 2017-05-10

This certificate may only be reproduced in its entirety and without any change.

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

17 Special Conditions for Use

- see EU-type examination certificate PTB 11 ATEX 1005 X Ausgabe 01
- If operated with a relay module:
  - The main alarm shall be configured "latching" and "non-acknowledgeable" or "pre-acknowledgeable".
  - The pre-alarm shall only be configured "acknowledgeable" if it is used for operation of an acoustic alarm device.
- For transmitters types ITR 0*1* and ITR 0*2*:
  - see EU-type examination certificate BVS 08 ATEX G 001 X
- For transmitters type XTR 0*0*:
  - see 9th supplement to the EU-type examination certificate BVS 05 ATEX E 143 X
- For transmitters type XTR 0*1*:
  - When exposed to a directed flow of air mixed with gas, the measured values can be increased by up to 32 %.
  - When operated with the remote calibration adapter DQ the measured values can be increased by up to 70 %.
- For transmitters type XTR 0*2*:
  - Operate the transmitter when connected to a control unit that has a latching over-range indication. Do not use internal alarm relays of the transmitter.
  - When exposed to a directed flow of air mixed with gas, the measured values can be increased by up to 32 %.
  - Adjust the transmitter with the sensor in its operational orientation.
  - False alarms can occur during warming up of the sensor.
- For transmitters type ETR 0*0*:
  - The response time t_{20} can exceed the limit of EN 50104 for small concentration changes.

18 Essential Health and Safety Requirements

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are covered by the standards listed under item 9.

19 Drawings and Documents

Drawings and documents are listed in the confidential test report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, dated 2020-02-04

Managing Director

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Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 11 ATEX 1005 X **Issue: 4**

(4) Product: Gas detection transmitters ETR/ITR/XTR/RCU 0***, EAC 01**

(5) Manufacturer: Dräger Safety AG & Co. KGaA

(6) Address: Revalstraße 1, 23560 Lübeck, Germany

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

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the 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 the confidential Test Report PTB Ex 22-21212.

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

EN IEC 60079-0:2018+AC:2020, EN 60079-1:2014+AC:2018,
EN IEC 60079-7:2015+A1:2018, EN 60079-11:2012, EN 60079-31:2014

(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 in accordance to the Directive 2014/34/EU. 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 2 G Ex db IIC T6...T4 Gb	**bzw.**
II 2 G Ex db ia IIC T6...T4 Gb	**bzw.**
II 2 G Ex db eb IIC T6...T4 Gb	**bzw.**
II 2 D Ex tb IIIC T80°C...T130°C Db	**bzw.**
II 2 G Ex db eb ia IIC T6...T4 Gb	**bzw.**

ZSEx001e c

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

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Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EU-TYPE EXAMINATION CERTIFICATE

(Translation)

Ex	**II 2 (1) G Ex db [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db ia [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db eb [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) G Ex db eb ia [ia Ga] IIC T6...T4 Gb**	**bzw.**
Ex	**II 2 (1) D Ex tb [ia Da] IIIC T135°C Db**	

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, December 14, 2022
On behalf of PTB:

Dr.-Ing. M. Thedens
Regierungsdirektor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 24

ZSEx001e c

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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 11 ATEX 1005 X, Issue: 4**

(15) Description of Product

The Gas detection transmitters ETR/ITR/XTR/RCU 0***, EAC 01** consist of three different types of sensor and interfaces. The Gas detection transmitter type ETR 0*** uses the electrochemical sensing principle or an ultrasonic sensor with an electrochemical sensor interface, the Gas detection transmitter type ITR 0*** uses the infrared sensing principle and the Gas detection transmitter type XTR 0*** uses the catalytic sensing principle or infrared sensing principle with a catalytic sensor interface. The Gas detection transmitter type RCU 0*** shall only be used with separate certified sensors. The sensor frontend (EC sensing head) of the ETR 0*** series comprises a galvanically separating barrier circuit (inside the flameproof enclosure) and intrinsically safe electronics located out-side the flameproof enclosure as well as an electro-chemical sensor or ultrasonic sensor - all of them being covered by this certificate. The sensors of the ITR 0*** and XTR 0*** series are covered by separate certifications, which are accepted under this certificate.

The internal electronic covers the intrinsically safe fieldbus under consideration of the maximum FISCO input ratings applicable for the operation as both FISCO Field device or alternatively non-intrinsically safe fieldbus PA/FF.

Type code:

***TR 0** * * *
1 2 3 4

1: Sensing principle / sensors
- E = electrochemical
- I = infrared
- X = catalytic

2: Series and enclosure material
- 2 = 02/03 series, aluminium enclosure
- 3 = 02/03 series, stainless steel enclosure
- 4 = 04/05 series, aluminium enclosure
- 5 = 04/05 series, stainless steel enclosure

3: Sensors

ITR 0 * * *

3: Sensors
- 0 = IDS 0001
- 1 = IDS 0101

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2 = IDS 0102
5 = IDS 0105

ETR 0 * * *
3: Sensors
0 = DrägerSensor or DrägerSensor XS with adapter *or DrägerSensor with Gas Generator type EDS 03***
2 = Ultraschall Sensor

XTR 0 * * *
3: Sensors
0 = IDS 0002
1 = XDS 020*
2 = Ex-Sensor LC NPT

4: Interface

0	=	"d", 4-20 mA
1	=	"d", 4-20 mA with Relay
2	=	"d", Modbus RTU
A	=	"d"+"ia", Foundation Fieldbus
B	=	"d"+"ia", Foundation Fieldbus SIF
E	=	"d"+"ia", Profibus
F	=	"d"+"ia", Profisafe
I	=	"d"+"e", 4-20 mA
J	=	"d"+"e", 4-20 mA with Relay
K	=	"d"+"e", Modbus RTU
S	=	"d"+"e"+"ia", Foundation Fieldbus
T	=	"d"+"e"+"ia", Foundation Fieldbus SIF
W	=	"d"+"e"+"ia", Profibus
X	=	"d"+"e"+"ia", Profisafe

Type code for Junction Box, type EAC 01 (Remote Sensor)**

EAC 01 * *
1 2

1: Enclosure Material
0 = Aluminum
1 = Stainless Steel
2: Features not relevant for the type of protection

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

Type code for Remote Box, type RCU 0*

RCU 0 * * *
1 2 3

1: Enclosure Material
2 = Aluminum
3 = Stainless Steel
2: Features not relevant for the types of protection

3: Interface

0	=	"d", 4-20 mA
1	=	"d", 4-20 mA with Relay
2	=	“d”, Modbus RTU
A	=	"d"+"ia", Foundation Fieldbus
B	=	"d"+"ia", Foundation Fieldbus SIF
E	=	"d"+"ia", Profibus
F	=	"d"+"ia", Profisafe
I	=	"d"+"e", 4-20 mA
J	=	"d"+"e", 4-20 mA with Relay
K	=	"d"+"e", Modbus RTU
S	=	"d"+"e"+"ia", Foundation Fieldbus
T	=	"d"+"e"+"ia", Foundation Fieldbus SIF
W	=	"d"+"e"+"ia", Profibus
X	=	"d"+"e"+"ia", Profisafe

The relation between ambient temperature and the assigned temperature class is as follows:

Type	Ambient temperature range	Temperature class (Gas)	Temperature class (dust)
ITR 0*0* RCU 0*** XTR 0*0*	-40 °C to +65 °C	T4	T130°C
All other versions	-40 °C to +80 °C	T4	T130°C
All versions	-40 °C to +40 °C	T6	T80°C
ETR 02/032* ETR 04/052*	-40 °C to +70 °C	T4	T135°C
ETR 02/030* ETR 04/050*	-40 °C to +70 °C	T4	T135°C
ETR 02/030* ETR 04/050*	-40 °C to +40 °C	T6	T135°C

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

Electrical Ratings:

Maximum supply wattage: P_{max}: 5 W

Supply:

ETR 02/03** series	10...30 VDC, 0.08...0.15 A
ITR 02/03** series	10...30 VDC, 0.1...0.75 A
XTR 02/03** series	10...30 VDC, 0.1...0.2 A
ETR 04/05** series	10...30 VDC, 0.1...0.35 A
ITR 04/05** series	10...30 VDC, 0.3...1.0 A
RCU 02/03** series	10...30 VDC, 0.3...1.0 A
XTR 04/05** series	10...30 VDC, 0.15...0.45 A
Relay	5A, 30 VDC or 230 VAC

Fieldbus circuit:
Field device as Fieldbus system in type of protection Intrinsic Safety Ex ia IIC; FISCO in acc. of IEC 60079-11, using only for the interface type A; B; E; F; S; T; W and X
or
Field device as Fieldbus system (non-intrinsically safe) using only for the interface type 2 and K
Electrical data: Maximum values:

Model	Voltage, Ui [VDC]	Current, Ii [mA]	Power, Pi [mW]
ETR 04*(*) ETR 05*(*) ITR 04*(*) ITR 05*(*) RCU 02*(*) RCU 03*(*) XTR 04*(*) XTR 05*(*)	17.5	380	5320

For the Gas detection transmitters series ETR ****
Sensor circuit: in type of protection Intrinsic safety Ex ia IIC / IIIC;
only for connecting Dräger Sensor or XS with adapter or
ultrasonic sensor or DraegerSensor with electrochemical sensor
type EDS 03**

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 4

(16) Test Report PTB Ex22-21212

(17) Specific conditions of use

The circuits are limited to overvoltage category I/II/III (non mains/mains circuits) as defined in IEC 60664-1 for FISCO field device operation.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. M. Thedens
Regierungsdirektor

Braunschweig, December 14, 2022

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In case of dispute, the German text shall prevail.

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ITEM	Tag	950-MFA-03102	: FZ-03 MFA Activation	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD
TASK	code	C10001546	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.**	225420465/20/06				
Manufacturer	Eaton MEDC			**Model**	SM87PBLD				
Cert No.	Baseefa 03 ATEX 0075X			**Equipment Ambient Temp.**	-55°C to +55°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	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	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	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	950-MFA-03102	: FZ-03 MFA Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001546		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	PL	
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	OK	
	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	950-MFA-03102	: FZ-03 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001546	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

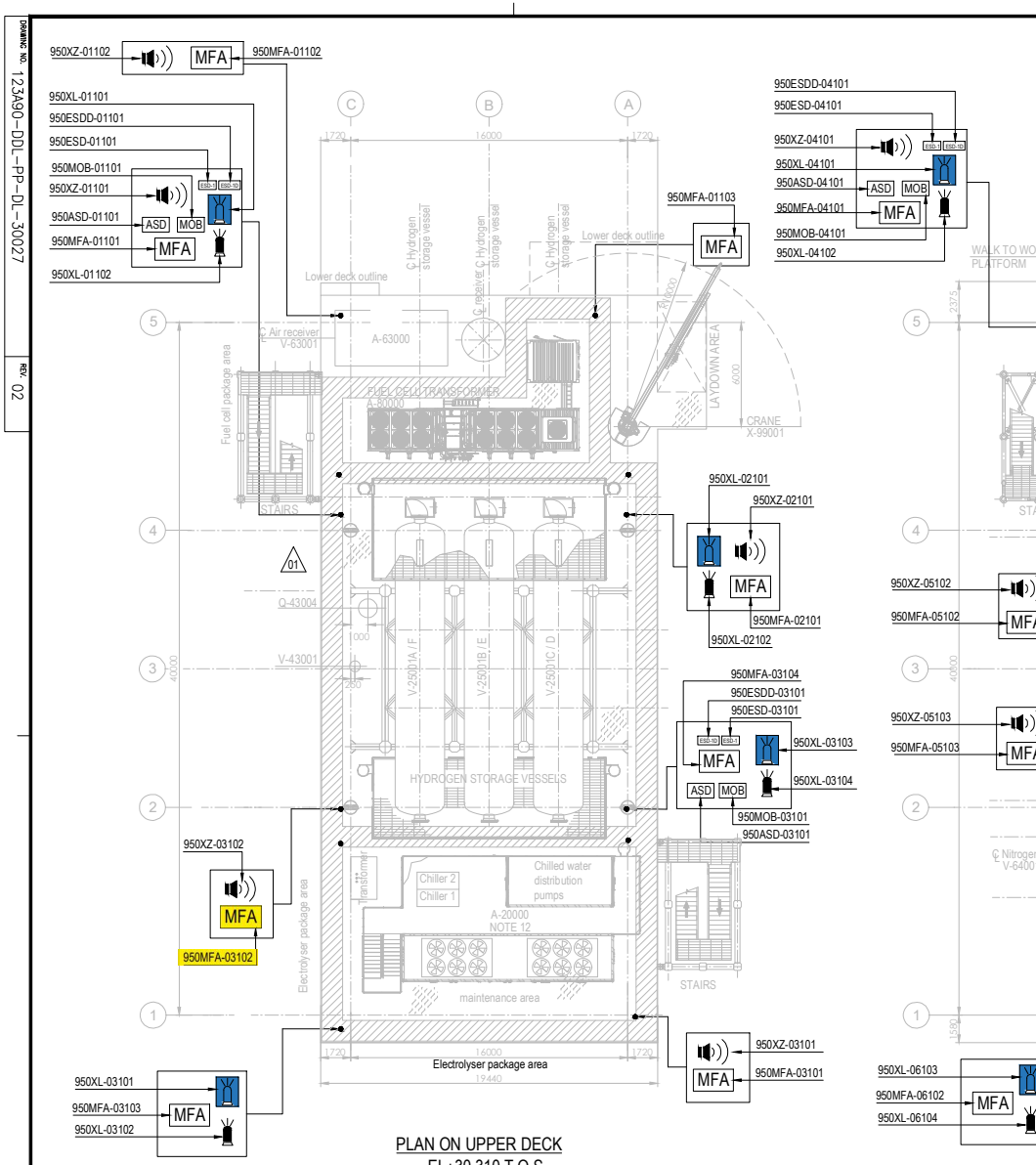
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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	Francesco Zucca	Alessio Polo	
Date	2024-12-11	2024-12-11	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-11T17:36:27.753Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-11T16:18:26.000Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



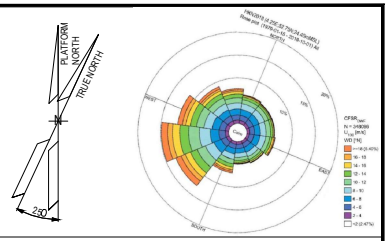
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.
6. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_C	03/12/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

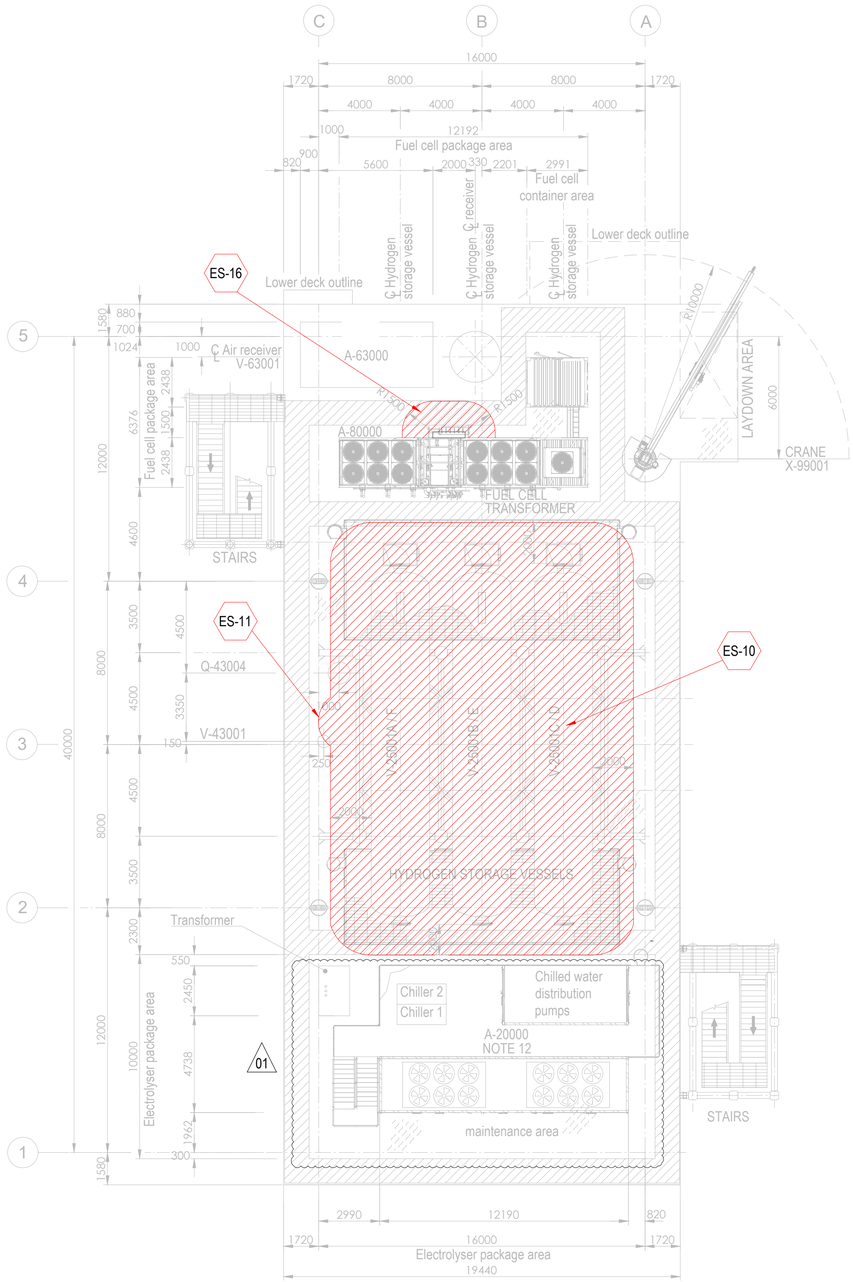
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

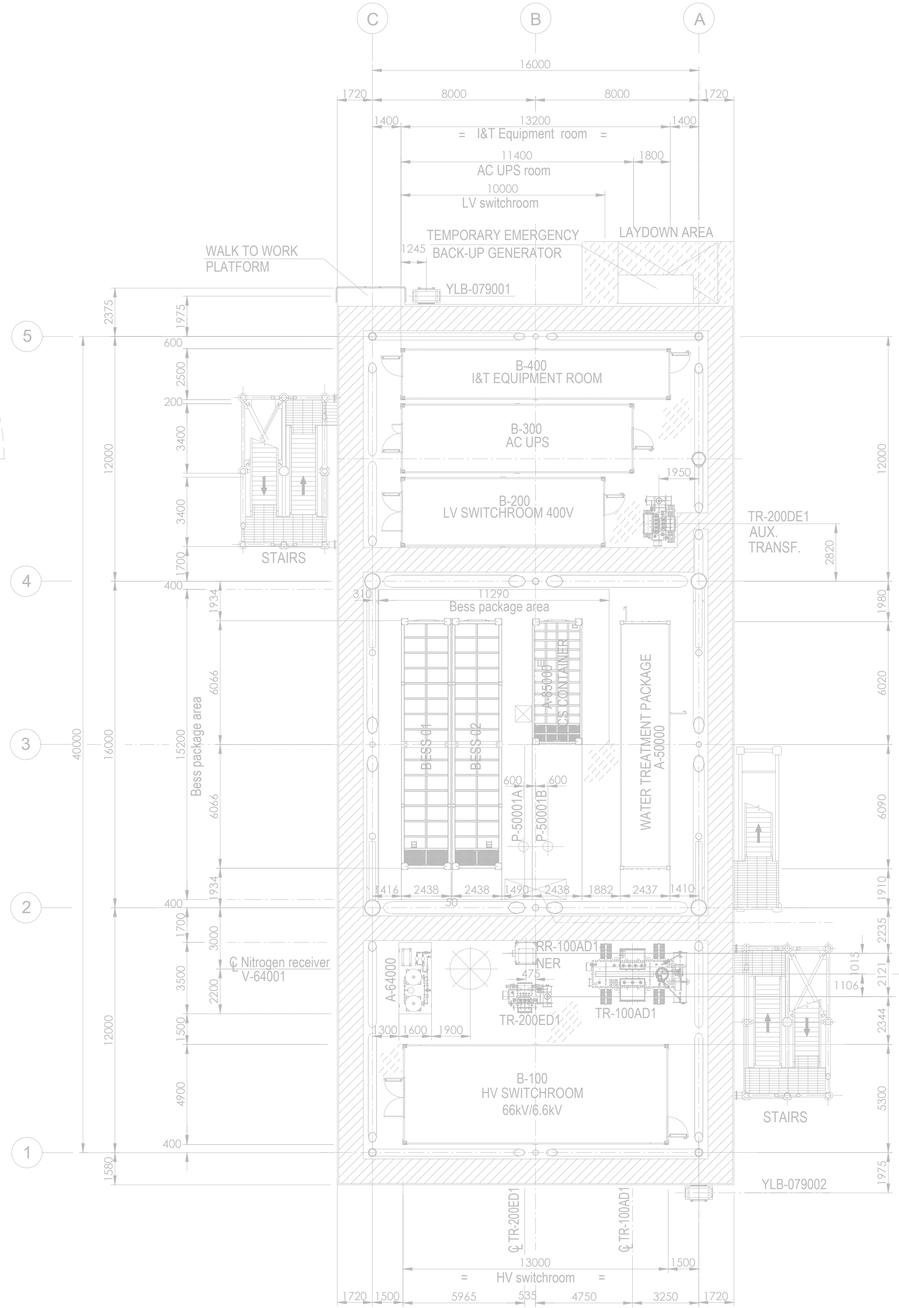
File Name : - 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01



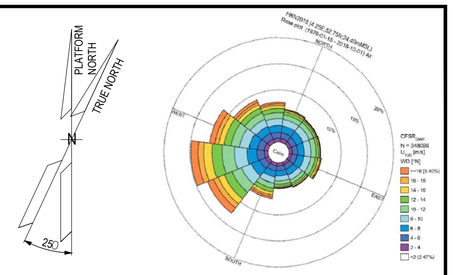
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

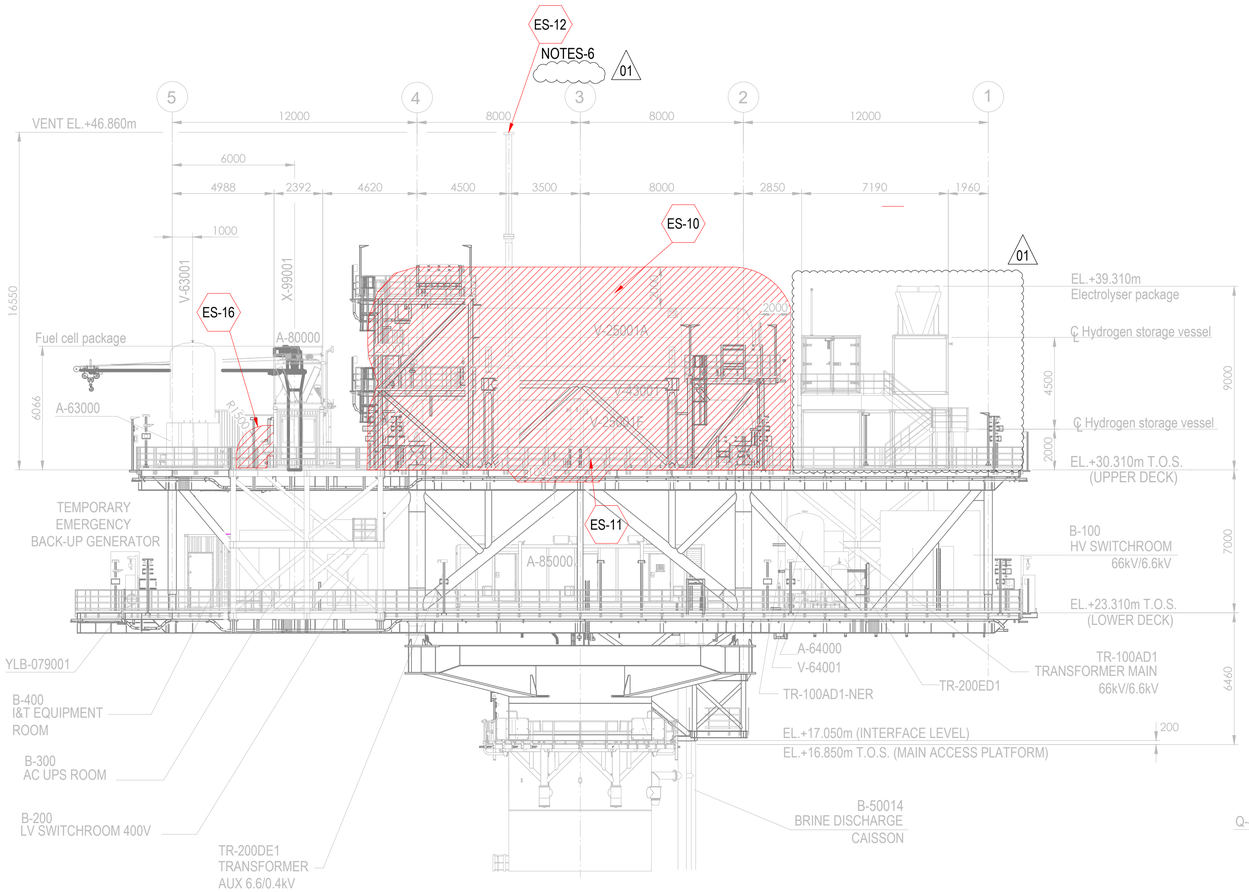
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

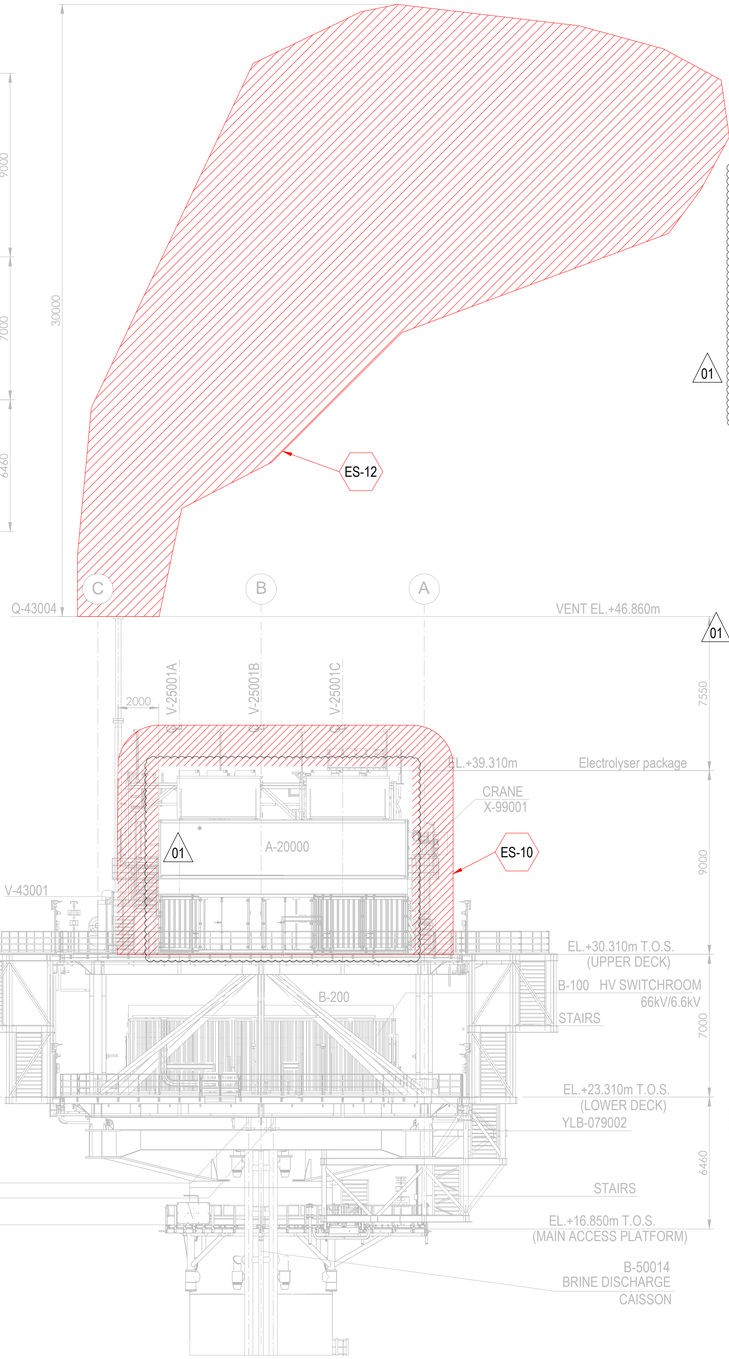
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



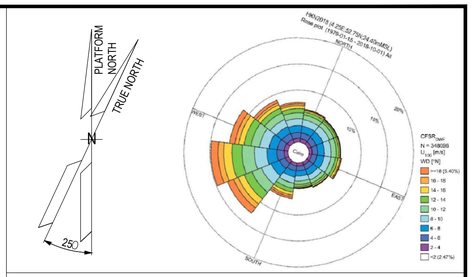
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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

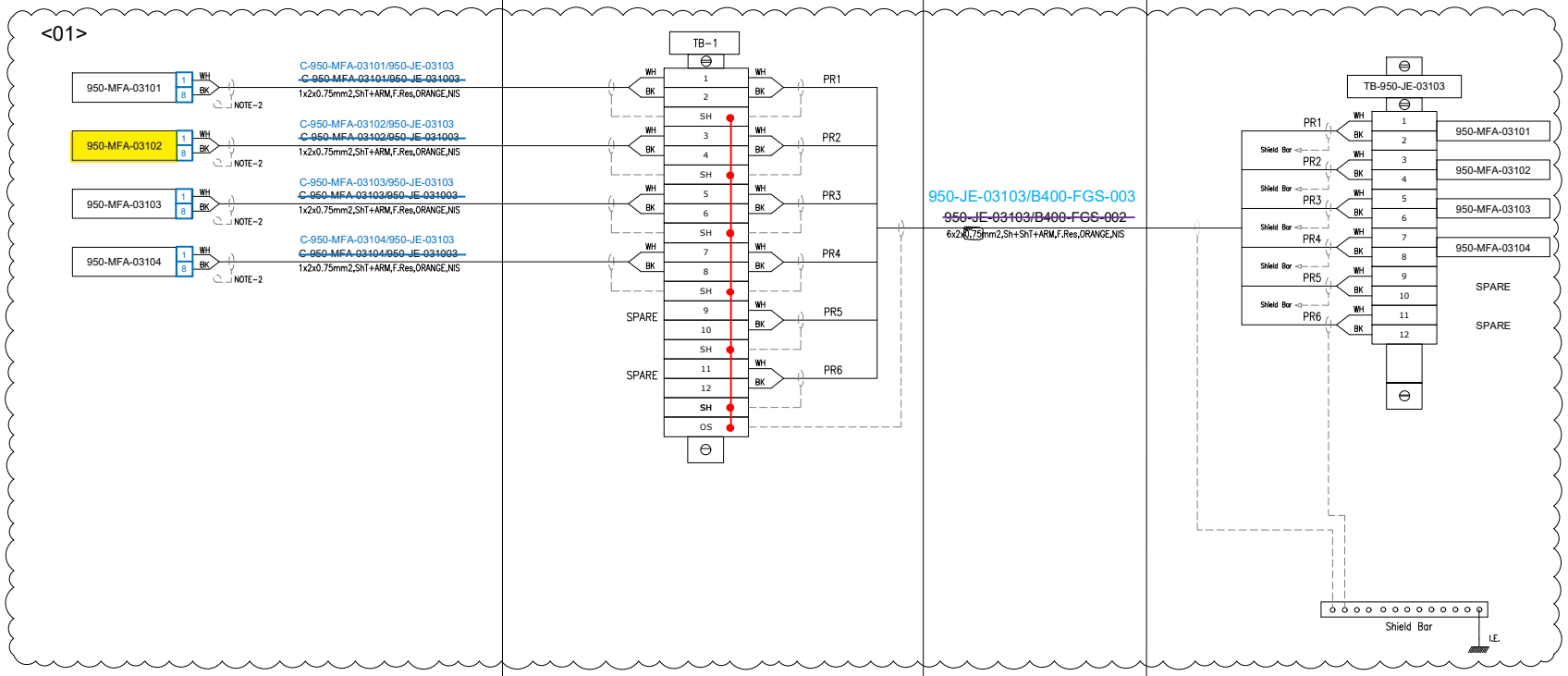
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File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03103	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03103

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

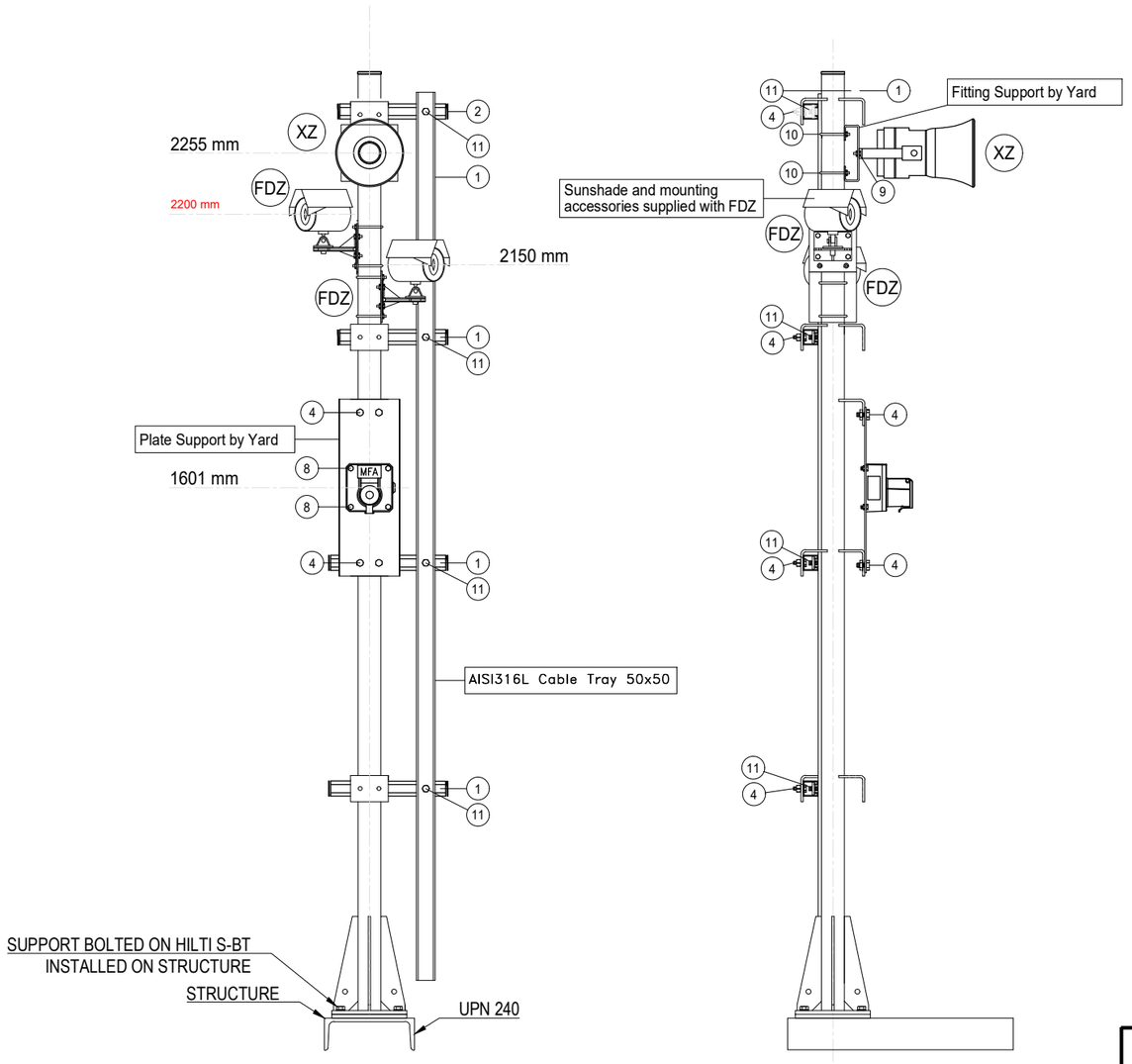
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 038	REV. 01

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

FGS-05

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	12
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
~~9~~	~~AISI 316L BOLT M6x35 + NUT M6 + WASHER M6~~	2
10	AISI 316L 2" U BOLT M8+ N.2 NUT M8 + N.2 WASHER M8	2
11	AISI 316L SPRING NUT M8 FOR U-CHANNEL 41X41 + BOLT M8x35 + WASHER M8	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	FDZ	FLAME DETECTOR	950-FDZ-01102
	FDZ	FLAME DETECTOR	~~950-FDZ-02101~~
	XZ	SOUNDER	950-XZ-01102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-01102
2	FDZ	FLAME DETECTOR	950-FDZ-02102
	FDZ	FLAME DETECTOR	950-FDZ-03101
	XZ	SOUNDER	950-XZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03102
3	FDZ	FLAME DETECTOR	950-FDZ-03103
	FDZ	FLAME DETECTOR	~~950-FDZ-02104~~ 950-FDZ-02102
	XZ	SOUNDER	950-XZ-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03101

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_E	13/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

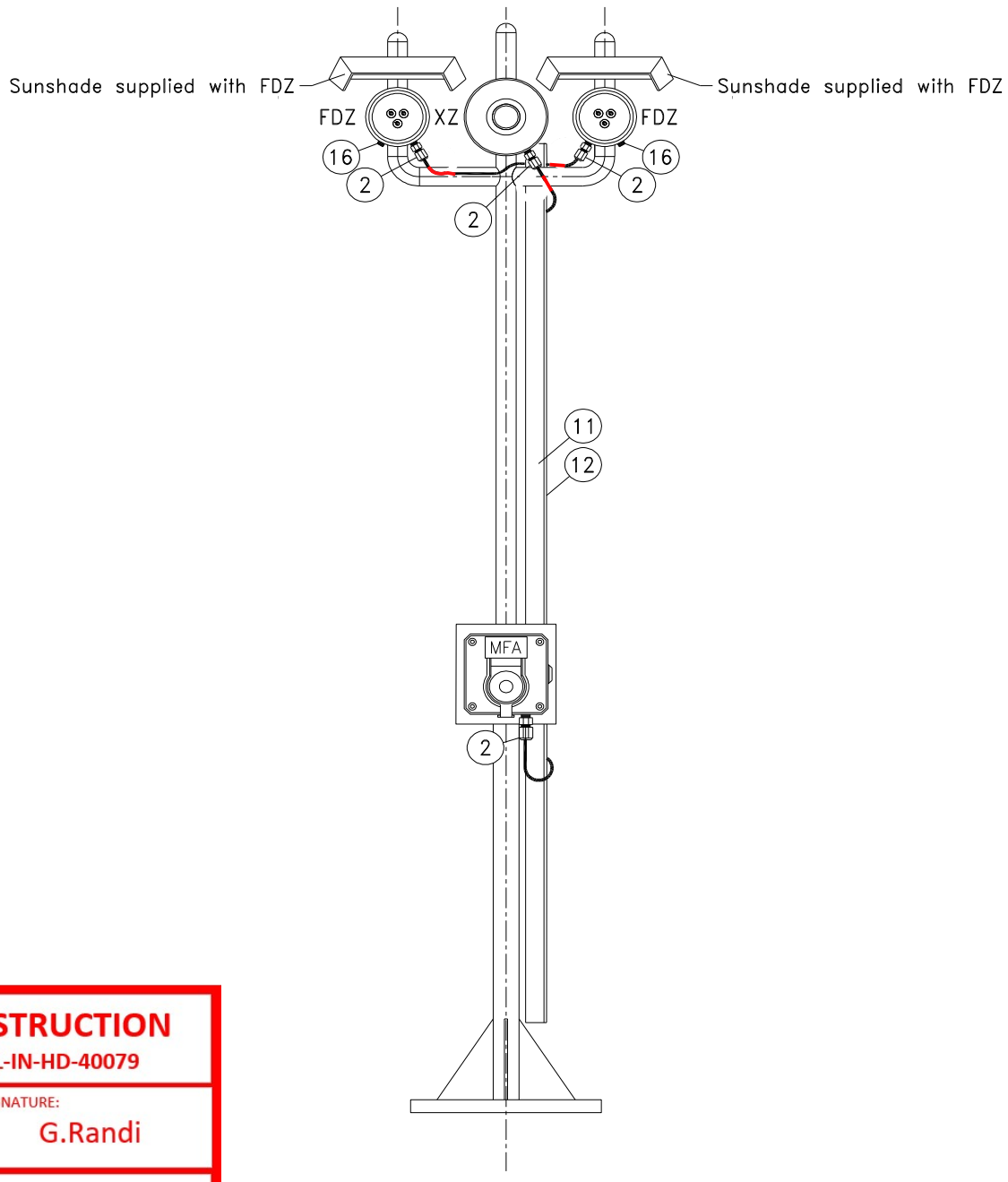
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 024	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-FDZ-01102
	950-XZ-01102
	~~950-FDZ-02101~~
	950-MFA-01102
2	950-FDZ-02102
	950-XZ-03102
	950-FDZ-03101
	950-MFA-03102
3	950-FDZ-03103
	950-XZ-03101
	950-FDZ-02104
	950-MFA-03101

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

REV.:	DATE:	SIGNATURE:
2_D	13/11/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	2
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

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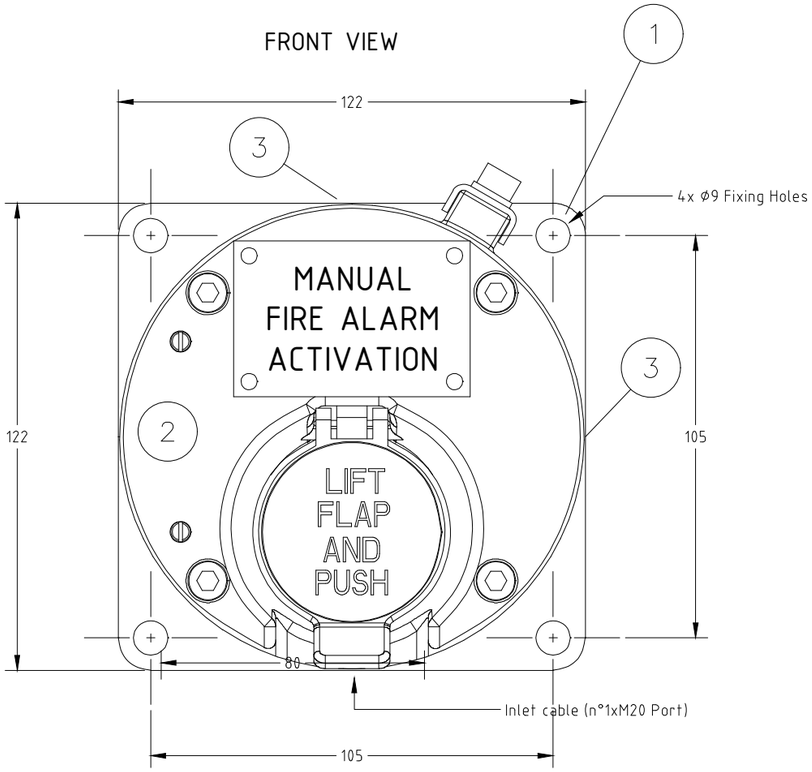
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED)

ITEM	DESCRIPTIONS	NR
1	Manual Call Point (Manual Fire Alarm) (Red), MEDC SM87PBLSD1B1ROYHDRZ	1
2	Stainless Steel Name Plate	1
3	Stop Plug M20 Ex d AISI 316	2
4		
5		
6		
7		
8		
9		
10		

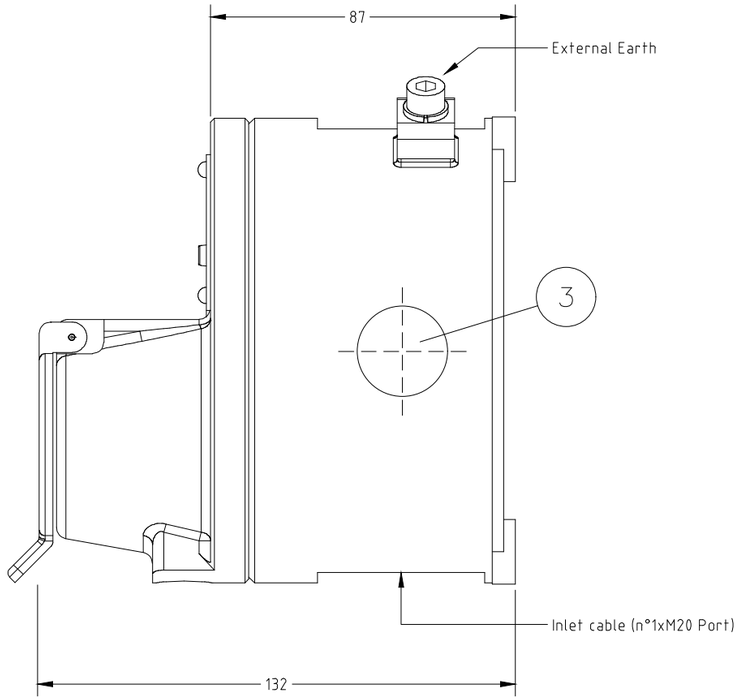
INSTALLATION QUANTITY

21

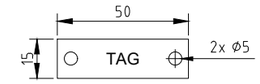
FRONT VIEW



SIDE VIEW



2 STAINLESS STEEL NAME PLATE DETAILS

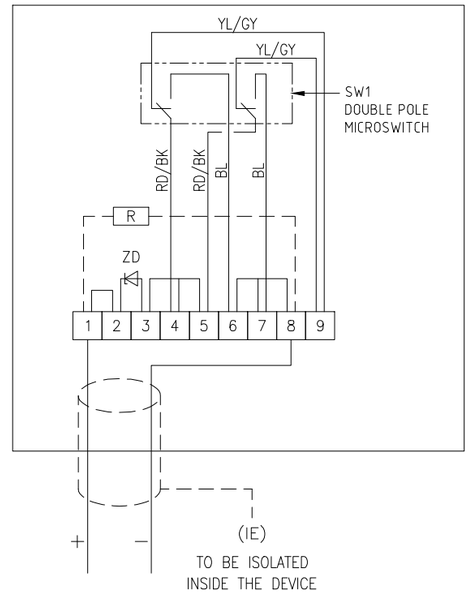


NOTE 5

WIRING

TERMINAL STRIP

ZD= ZENER 1N5339B 5.6V
R= 36 KOhm



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED)

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 015 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

MANUAL CALL POINT (MANUAL FIRE ALARM) (RED) – TAG

POS.	TAG NUMBER
1	950-MFA-01101
2	950-MFA-01102
3	950-MFA-01103
4	950-MFA-02101
5	950-MFA-03101
6	950-MFA-03102
7	950-MFA-03103
8	950-MFA-03104
9	950-MFA-04101
10	950-MFA-04102
11	950-MFA-04201
12	950-MFA-04202
13	950-MFA-04203
14	950-MFA-05101
15	950-MFA-05102
16	950-MFA-05103
17	950-MFA-05104
18	950-MFA-06101
19	950-MFA-06102
20	950-MFA-06201
21	950-MFA-07101

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED) – TAG

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 016 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

MANUAL FIRE ALARM

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-MFA-01101	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
2	950-MFA-01102	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
3	950-MFA-01103	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
4	950-MFA-02101	FZ-02 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
5	950-MFA-03101	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
6	950-MFA-03102	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
7	950-MFA-03103	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
8	950-MFA-03104	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
9	950-MFA-04101	FZ-04 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
10	950-MFA-04102	FZ-04 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
11	950-MFA-04201	FZ-04 MFA ACTIVATION - B-400 INDOOR	MANUAL FIRE ALARM ACTIVATION
12	950-MFA-04202	FZ-04 MFA ACTIVATION - B-300 INDOOR	MANUAL FIRE ALARM ACTIVATION
13	950-MFA-04203	FZ-04 MFA ACTIVATION - B-200 INDOOR	MANUAL FIRE ALARM ACTIVATION
14	950-MFA-05101	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
15	950-MFA-05102	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
16	950-MFA-05103	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
17	950-MFA-05104	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
18	950-MFA-06101	FZ-06 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
19	950-MFA-06102	FZ-06 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
20	950-MFA-06201	FZ-06 MFA ACTIVATION - B-100 INDOOR	MANUAL FIRE ALARM ACTIVATION
21	950-MFA-07101	FZ-07 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION

File: 1724000821-IN-DS-00004-02.xlsx
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SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

The units are both easy to install and maintain. Intrinsically safe Ex ia and flameproof Ex d versions of each model are available.

A choice of either stainless steel or alloy makes the range suitable for either the offshore or onshore industries. Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

ATEX IECEx cULus LISTED ULC INMETRO CSA DNV·GL MARITIME CCC

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All other trademarks are property of their respective owners.

Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

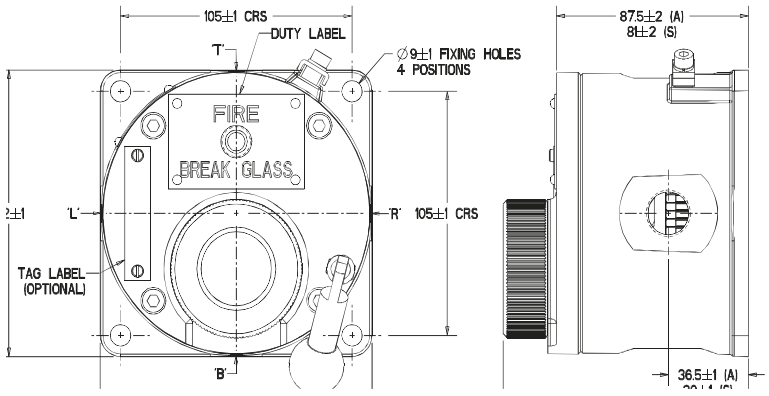
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

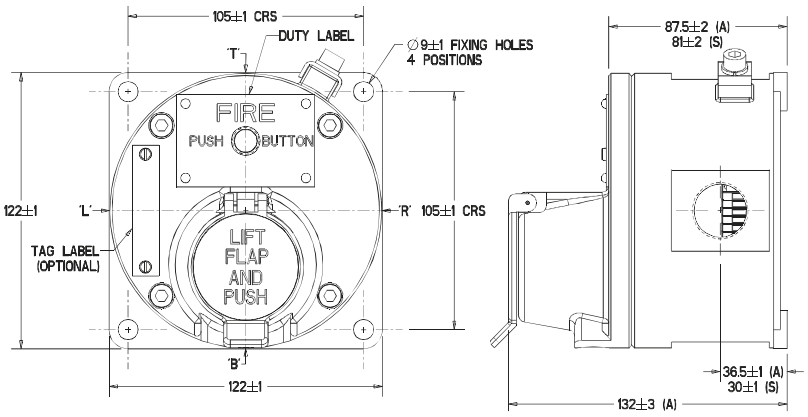
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy	
Finish	Paint finish as standard or to customer specification	
Voltage	Ex d 24V a.c./d.c. Ex ia 28V	
Rating	2A	
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)	
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA	
Certified temp	Ex d* Ex ia* UL CSA Explosion proof - Class 1, Div 1 & 2. CSA - Ex d IIC CSA Intrinsically safe - Class 1, Div 1 & 2 *Note: includes ATEX, IECEx & INMETRO versions	–55°C to +70°C. –55°C to +60°C –20°C to +55°C (LED version only) –40°C to +70°C, –20°C to +55°C (LED version only) –50°C to +55°C –55°C to +70°C –50°C to +40°C
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)	
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)	
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side	
Terminals	Will accept up to 1·5mm² cable	
Resistor values	470R minimum (d.c. & I.S. units only)	

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*

	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*

	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification

	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries

	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label

	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label

	Code
Required	Y*
Not required	N

*Please specify

Options

	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

*Please specify

Finish

	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

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
281	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
282	02	950-FDZ-04104	FLAME DETECTOR	FZ-04 B-400/B-300/B-200 AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
283	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
284	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
285	02	950-FDZ-05101	FLAME DETECTOR	FZ-05 BESS AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
286	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
287	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
288	02	950-FDZ-05102	FLAME DETECTOR	FZ-05 BESS AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
289	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
290	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
291	02	950-FDZ-05103	FLAME DETECTOR	FZ-05 BESS AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
292	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
293	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
294	02	950-FDZ-05104	FLAME DETECTOR	FZ-05 BESS AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
295	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
296	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
297	02	950-FDZ-06101	FLAME DETECTOR	FZ-06 B-100 AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
298	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
299	02							II 2 G Ex db IIC T5 Gb	1724000821-IN-DS-00004	ICQC 19 ATEX 0424X (SENSOR)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
300	02	950-FDZ-06102	FLAME DETECTOR	FZ-06 B-100 AREA	FGD	FlameSpec FLS-UV-IR-AS11	Note1	II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	TPS19 ATEX 105708 0001X (PLUG)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
301	02							II 2 GD Ex db IIC Gb	1724000821-IN-DS-00004	INERIS 14 ATEX 0029X (REDUCTION)	Zone 2	Note 1: Tags will be provided loose and associated with the serial number during installation.	1724000821	FORES ENGINEERING	NA	NA	NO	YES
302	02	950-MFA-01101	MANUAL FIRE ALARM	FZ-01 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/1	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
303	02	950-MFA-01102	MANUAL FIRE ALARM	FZ-01 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/2	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
304	02	950-MFA-01103	MANUAL FIRE ALARM	FZ-01 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/3	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
305	02	950-MFA-02101	MANUAL FIRE ALARM	FZ-02 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/4	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
306	02	950-MFA-03101	MANUAL FIRE ALARM	FZ-03 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/5	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
307	02	950-MFA-03102	MANUAL FIRE ALARM	FZ-03 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/6	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
308	02	950-MFA-03103	MANUAL FIRE ALARM	FZ-03 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/7	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES

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: **Baseefa03ATEX0075X – Issue 21**

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **SM87 Alarm Stations**

5 Manufacturer: **Eaton MEDC Limited**

6 Address: **Unit B, Sutton Parkway, Oddicroft Lane, Sutton-in-Ashfield, NG17 5FB**
United Kingdom

7 This re-issued certificate extends EC Type Examination Certificate No. **Baseefa03ATEX0075** 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:

II 2 GD Ex db IIC T* Gb Tamb -55°C to +°C Ex tb IIIC T**°C Db IP66/67 Tamb -55°C to +**°C**

SGS Fimko Oy Customer Reference No. **0676** Project File No. **22/0235**

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Mikko Välimäki
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number Baseefa03ATEX0075X – Issue 21

15 Description of Product

The Range of SM87 Alarm Stations comprises a cylindrical enclosure a square base with an irregular shaped cover secured by 4 off screws of grade A4-70 or A4-80 stainless steel. The base and cover may be manufactured from either aluminium or stainless steel.

The cover is fitted with an actuator mechanism which may be operated by either a push button or break glass function dependant on the external actuator assembly.

The units may be supplied by the manufacturer in an assembly of up to five interconnected enclosures using cable bushings to EPS13ATEX1619U.

The range of Type SM87 Alarm Stations comprises:-

Type BGLD – A Breakglass unit with latching mechanism The interior of the enclosure comprises up to two micro-switches, mounted on the inside of the cover, and up to twelve rail mounted terminals fitted to the enclosure base, and rated up to 24V, 2A.

Type LBGLD - A Breakglass unit with protective lift flap and latching mechanism. The interior and rating as per the Type BGLD.

Type PBLD – A Push Button unit with latching mechanism. The interior and rating as per the Type BGLD.

Type PBMD – A Push button unit with momentary mechanism. The interior and rating as per the Type BGLD.

Type SM87 EOL Unit A – The interior comprises up to two micro-switches, mounted on the inside of the cover, and up to twelve rail mounted terminals fitted to the enclosure base with the addition of an end of line module rated 24V 0.5A.

Type SM87 Addressable Unit B –The interior comprises up to two micro-switches, mounted on the inside of the cover and a Servoteknikk addressable callpoint PCB, rated up to 24V 0.5A.

Type SM87 Addressable Unit G –The interior comprises up to two micro-switches, mounted on the inside of the cover and a Tyco addressable callpoint PCB, rated up to 24V 0.5A.

Type SM87 Addressable Unit F – The interior comprises up to two micro-switches, mounted on the inside of the cover and an Autronica addressable callpoint PCB, rated up to 24V 0.5A.

Type SM87 XP950 Module Unit – The interior comprises up to two micro-switches, mounted on the inside of the cover and an Apollo PCB, rated up to 24V 1.0A.

Type SM87 Addressable Unit H - The interior comprises a Hochiki addressable callpoint PCB and up to 7 terminals rated at up to 24V 0.2A.

Type SM87 Addressable Unit J - The interior comprises a Ziton addressable module, up to 5 terminals and 2 x 2.5W resistors rated at up to 24V 0.1A, 7W.

Type SM87PBD MCR-CUBE EOL Unit – an SM87 Alarm Station with switches mounted on the underside of the cover and an end of line (EOL) module and terminals mounted in the base, rated up to 24V, 0.5A.

Type SM87 Omron Relay Unit A – Type SM87 Alarm Station comprising an alternative interior which includes a relay callpoint, Omron Type SPDT G2R and up to 6 Weidmuller AKZ 1.5 terminals, rated up to 24V, 2A.

Type SM87 Addressable Unit C - SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable printed circuit board (PCB) mounted in the base, rated up to 28V, 0.5A

Type SM87 Addressable Module G – with switches mounted on the underside of the cover and an alternative addressable Tyco module mounted in the base, rated up to 24V, 0.02A.

Type SM87 Addressable Module I – with switches mounted on the underside of the cover and an alternative addressable Apollo module mounted in the base, rated up to 24V, 0.02A.

Type SM87 Addressable Module K – with switches mounted on the underside of the cover and an alternative addressable Tyco module mounted on the base, rated up to 24V, 0.1A.

The alarm stations are coded:-

Ex db IIC T6 Gb Tamb -55°C to +55°C

Ex tb IIIC T85°C Db IP66/67 Ta -55°C to +55°C

Or

Ex db IIC T5 Gb Tamb -55°C to +70°C

Ex tb IIIC T100°C Db IP66/67 Ta -55°C to +70°C

Cable entry holes are provided as specified on the certified drawings for the accommodation of flameproof cable entry devices, with or without the interposition of a flameproof thread adapter. Unused entries are to be fitted with suitable certified flameproof stopping plugs.

The cable entry devices, thread adapters and stopping plugs shall be suitable for the equipment, the cable and the conditions of use and shall be certified as Equipment (not a Component) under an EC Type Examination Certificate to Directive 2014/34/EU.

When used in an explosive dust atmosphere the cable entry devices shall maintain the ingress protection of the enclosure.

16 Report Number

See certificate history.

17 Specific Conditions of Use

1. Potential electrostatic charging hazard – see instructions.

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, and conformity is demonstrated in the report:

Clause	Subject
1.2.7	LVD type requirements
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Sheet	Issue	Date	Description
562-774	1 - 2	F	08-08-23	ATEX Certification Detail SM87BGLD, SM87PBLD, SM87LBGLD & PBMD
562-778	1	B	08-08-23	SM87BG ATEX Certification Label
562-779	1	B	08-08-23	SM87PB ATEX Certification Label

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
562-775	1 & 2	E	12/12/19	SM87PBD SM87BGD ATEX OPTIONAL MODULE DETAILS
562-851		A	25.11.10	General Arrangement, SM87PBD MCR-CUBE EOL UNIT

20 Certificate History

Certificate No.	Date	Comments
Baseefa03ATEX0075	09 May 2006	The release of the prime certificate. The associated test and assessment against the requirements of EN 50014:1997 + Amendments 1 & 2, EN 50018:2000 + Amendment 1, EN 50281-1-1:1998 is documented in Test Report No. 02(C)0226.
Baseefa03ATEX0075/1	27 January 2004	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an addressable printed circuit board (PCB) mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT B** and is rated up to 24V, 0.5A with a revised Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/2	27 January 2004	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable printed circuit board (PCB) mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT F** and is rated up to 24V, 0.5A with a revised Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/3	29 January 2004	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable printed circuit board (PCB) mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT G** and is rated up to 24V, 0.5A with a revised Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.

Certificate No.	Date	Comments
Baseefa03ATEX0075/4	25 August 2005	To note change in type reference of the addressable callpoint. No report.
Baseefa03ATEX0075/5	14 October 2005	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative printed circuit board mounted in the base. In this form the unit is designated a **SM87 XP950 MODULE UNIT** and is rated up to 24V, 1A with a revised Temperature Classification of T85°C (Tamb = -55°C to +55°C). No report.
Baseefa03ATEX0075/6	05 December 2005	Alternative rating of 48V, 1A for the SM87 Alarm Stations, together with a change to the optional internal resistors. No report.
Baseefa03ATEX0075/7	14 September 2006	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and up to 12 rail mounted terminals and an end of line (EOL) device mounted in the base. In this form the unit is designated a **SM87PBD EOL UNIT A** and is rated up to 24V, 0.5A with a Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/8	10 October 2007	Optional addition of an indicator LED and window assembly to the cover of the push-button and break-glass units. Baseefa certification report 04(C)0562 refers.
Baseefa03ATEX0075/9	07 July 2008	To permit an optional transient voltage suppressor rated up to 5W. No report.
Baseefa03ATEX0075/10	07 January 2009	Alternative arrangement comprising an SM87 Alarm Station with an addressable callpoint mounted on the underside of the cover and an addressable printed circuit board (PCB) module and terminals mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT H** and is rated up to 24V, 0.02A with a Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/11	17 April 2009	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an addressable printed circuit board (PCB) module and terminals mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT J** and is rated up to 24V, 0.1A with a Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/12	27 September 2010	To amalgamate the current design and previous variations into one revised set of drawings. No technical changes were carried out. SGS Baseefa certification report GB/BAS/ExTR09.0084/00 refers.

Certificate No.	Date	Comments
Baseefa03ATEX0075/13	23 December 2010	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an end of line (EOL) module and terminals mounted in the base. In this form the unit is designated a **SM87PBD MCR-CUBE EOL UNIT** and is rated up to 24V, 0.5A. No report.
Baseefa03ATEX0075/14	10 May 2012	Variation to the Type SM87 Alarm Station comprising an alternative interior which includes a relay callpoint, Omron Type SPDT G2R and up to 6 Weidmuller AKZ 1.5 terminals. In this form the unit is designated a **Type SM87 Omron Relay Unit A** and is rated up to 24V, 2A. No report.
Baseefa03ATEX0075/15	4 October 2013	To increase the number of resistors rated at up to 470Ω and 0.6W installed in the SM87 from 4 to a maximum of 6 without any increase in power dissipation. SGS Baseefa report GB/BAS/ExTR13.0225/00 refers.
Baseefa03ATEX0075/16	15 October 2013	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable printed circuit board (PCB) mounted in the base. In this form the unit is designated a **SM87 Addressable Unit C** and is rated up to 28V, 0.5A with a Temperature Classification of T85°C (Tamb -55°C to +55°C) or T100°C (Tamb -55°C to +70°C). SGS Baseefa certification report GB/BAS/ExTR13.0232/00 refers.
Baseefa03ATEX0075/17	20 January 2014	Increase in the maximum number of rail mounted terminals to thirteen. SGS Baseefa certification report GB/BAS/ExTR14.0022/00 refers.
Baseefa03ATEX0075/18	22 January 2015	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable Tyco module mounted in the base. In this form the unit is designated a **SM87 Addressable Module G** and is rated up to 24V, 0.02A with a Temperature Classification of T85°C (Tamb -55°C to +55°C) or T100°C (Tamb -55°C to +70°C). Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable Apollo module mounted in the base. In this form the unit is designated a **SM87 Addressable Module I** and is rated up to 24V, 0.02A with a Temperature Classification of T85°C (Tamb -55°C to +55°C) or T100°C (Tamb -55°C to +70°C). No report.
Baseefa03ATEX0075/19	23 June 2015	Addition of alternative terminal Type Weidmuller AKZ1.5 to the existing list of terminals; Weidmuller: AKZ4 — Max Number 12 Weidmuller: AKZ1.5 — Max Number 13 Weidmuller: AKZ2.5 — Max Number 13 Phoenix: MBK up to 2.5mm — Max Number 13 SGS Baseefa certification report GB/BAS/ExTR15.0189/00 refers.

Certificate No.	Date	Comments
Baseefa03ATEX0075/20	31 January 2020	To introduce an alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable Tyco module mounted on the base. In this form the unit is designated a **SM87 Addressable Module K** and is rated up to 24V, 0.1A with a temperature classification of T85°C (Tamb -55°C to +55°C) or T100°C (Tamb -55°C to +70°C). SGS Baseefa certification report 20(C)0064 refers.
Baseefa03ATEX0075X Issue 21	14 November 2023	To assess the SM87 Alarm Stations against EN IEC 60079-0:2018, EN 60079-1:2014 and EN 60079-31:2014. SGS Baseefa certification report GB/BAS/ExTR22.0113/00 refers.
For drawings applicable to each issue, see original of that issue.		

ITEM	Tag	950-MFA-03104	: FZ-03 MFA Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001548		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.**		225420465/20/08			
Manufacturer	Eaton MEDC			**Model**		SM87PBLD			
Cert No.	Baseefa 03 ATEX 0075X			**Equipment Ambient Temp.**		-55°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	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	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	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	950-MFA-03104	: FZ-03 MFA Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001548		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	PL	
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	OK	
	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	950-MFA-03104	: FZ-03 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001548	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	

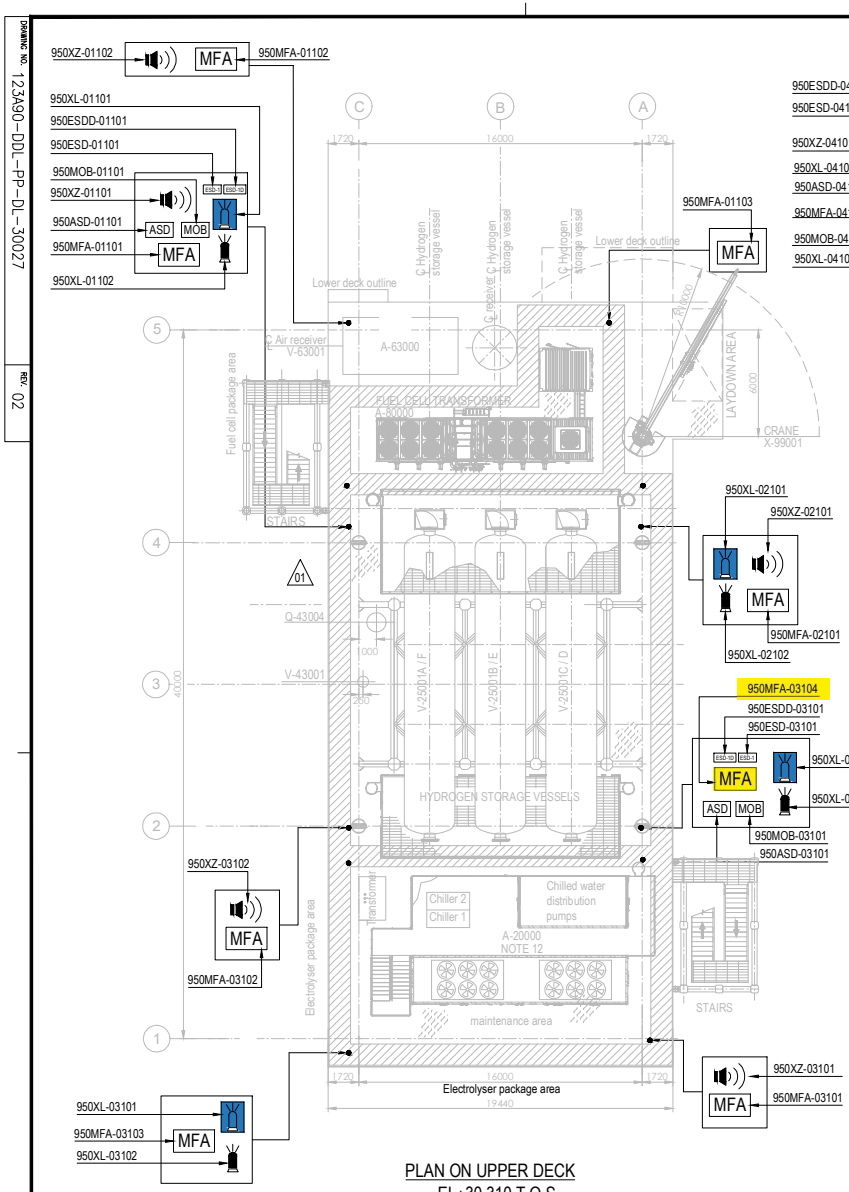
	BARRIER:	**Manufacturer:**	NA	**Model:**	NA		
		Authority:	NA	**Cert No:**	NA	**Type:**	NA

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	Francesco Zucca	Alessio Polo	
Date	2024-12-11	2024-12-12	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-11T17:36:47.119Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-12T07:31:04.497Z	

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02



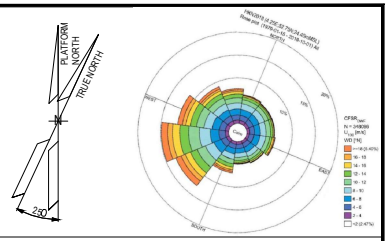
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.
6. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_C	03/12/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

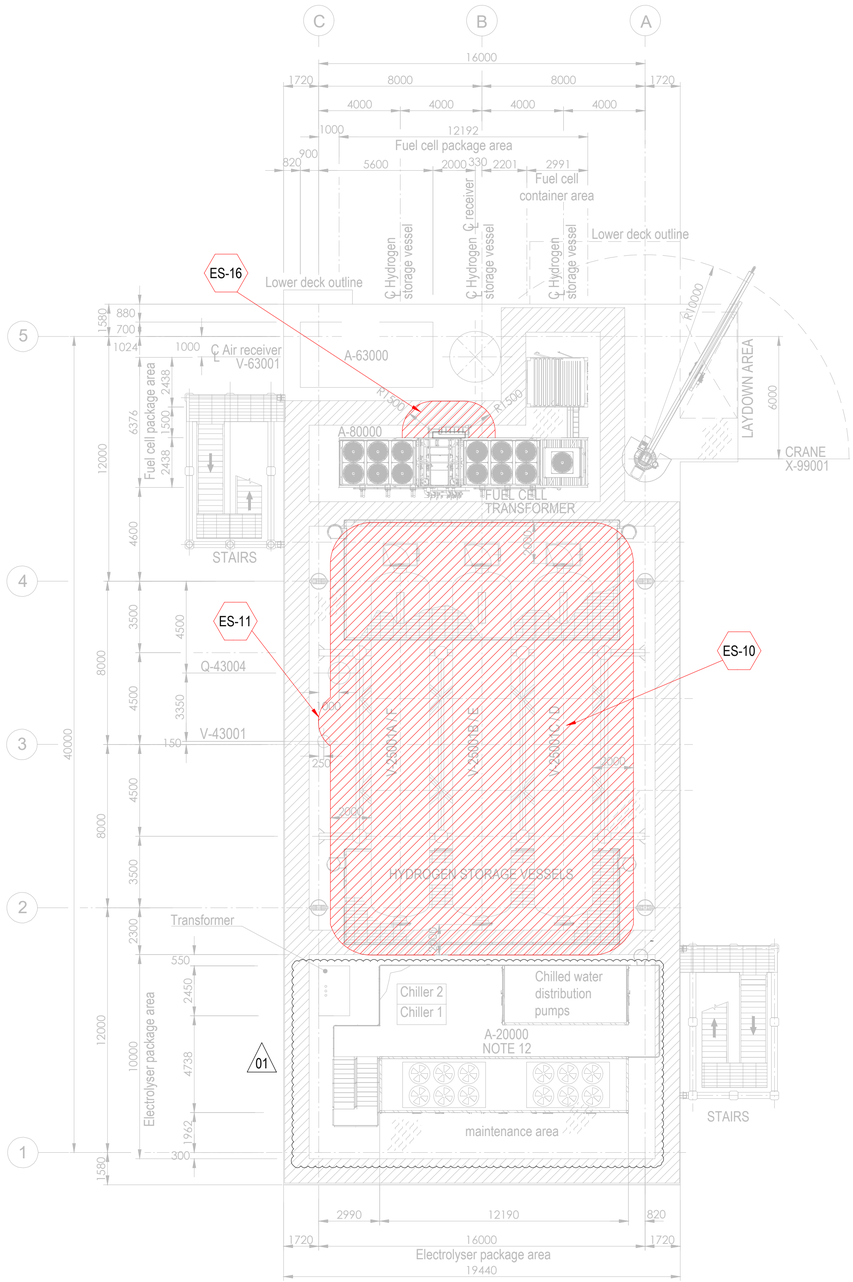
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

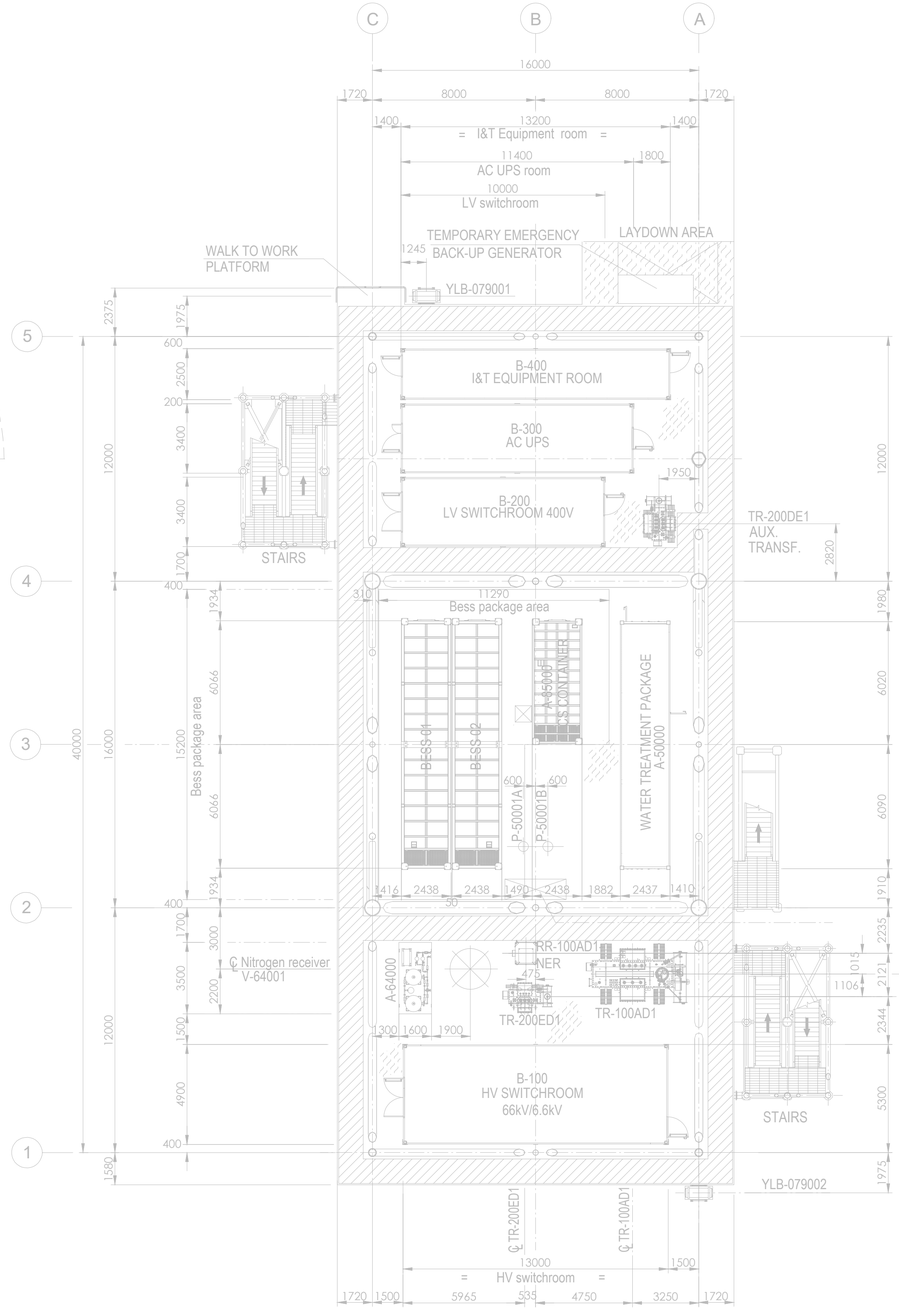
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 01



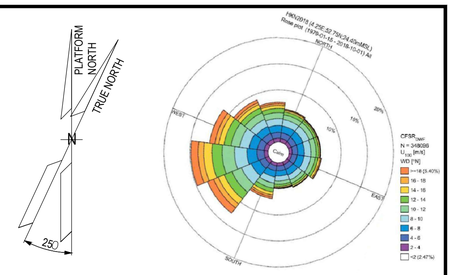
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

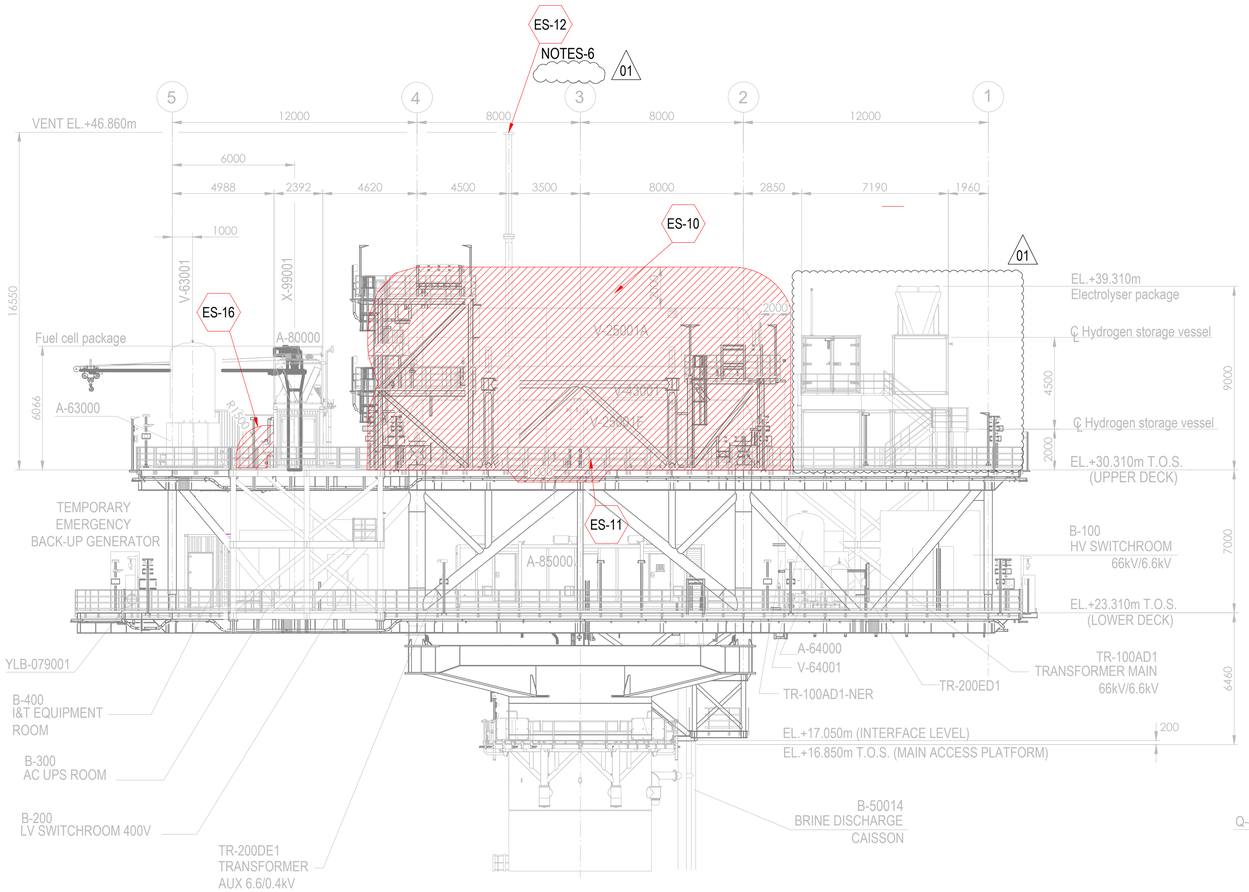
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

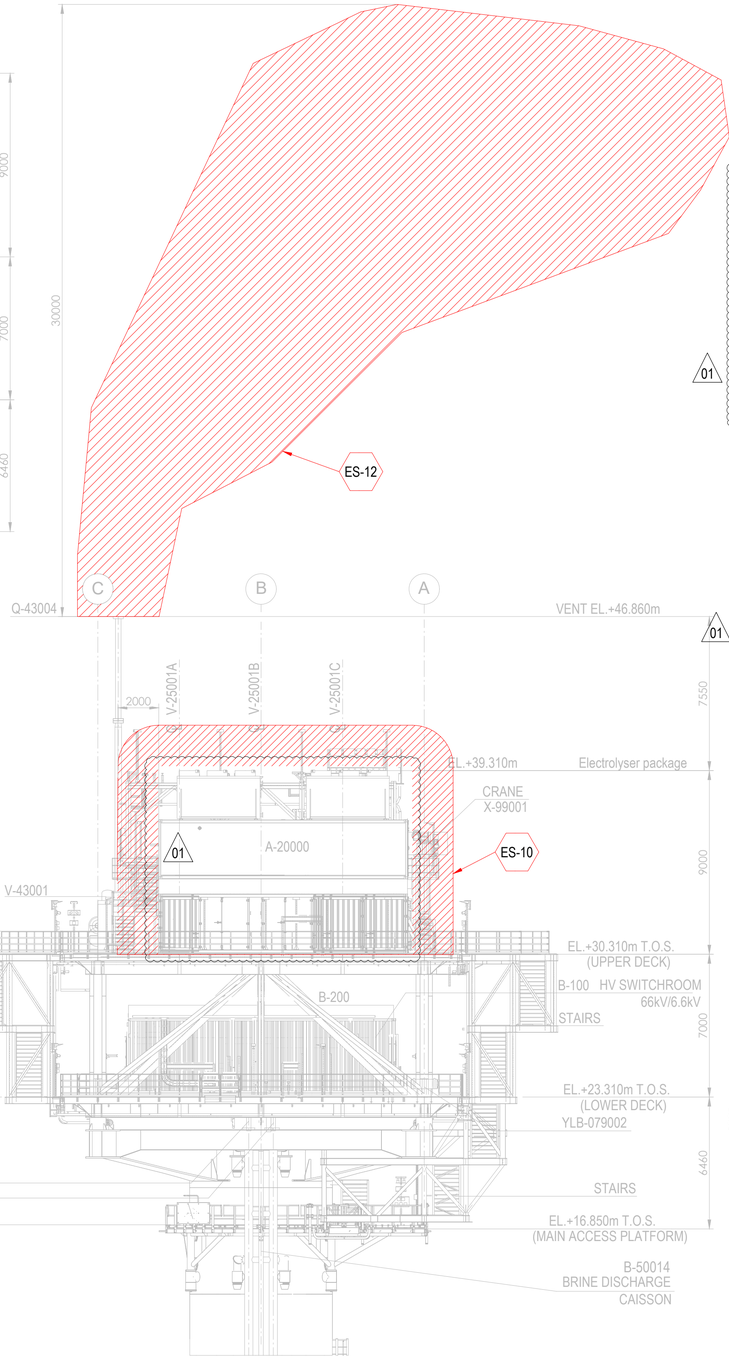
File Name : 123A90-DDL-SAF-DL-30022 Rev.01

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

REV. 01



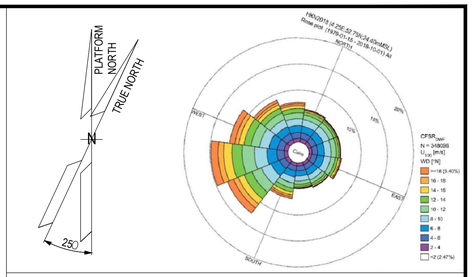
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03103	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

950-MFA-03101 — C-950-MFA-03101/950-JE-03103 ~~C-950-MFA-03101/950-JE-031003~~ 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS — NOTE-2

950-MFA-03102 — C-950-MFA-03102/950-JE-03103 ~~C-950-MFA-03102/950-JE-031003~~ 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS — NOTE-2

950-MFA-03103 — C-950-MFA-03103/950-JE-03103 ~~C-950-MFA-03103/950-JE-031003~~ 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS — NOTE-2

950-MFA-03104 — C-950-MFA-03104/950-JE-03103 ~~C-950-MFA-03104/950-JE-031003~~ 1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS — NOTE-2

TB-1

WH/BK	1	WH/BK PR1
	2	
	SH	
WH/BK	3	WH/BK PR2
	4	
	SH	
WH/BK	5	WH/BK PR3
	6	
	SH	
WH/BK	7	WH/BK PR4
	8	
	SH	
SPARE	9	WH/BK PR5
	10	
	SH	
SPARE	11	WH/BK PR6
	12	
	SH	
	OS	

950-JE-03103/B400-FGS-003 ~~950-JE-03103/B400-FGS-002~~ 6x2x0.75mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03103

PR1 WH/BK	1	950-MFA-03101
Shield Bar PR2 WH/BK	2	
	3	950-MFA-03102
Shield Bar PR3 WH/BK	4	
	5	950-MFA-03103
Shield Bar PR4 WH/BK	6	
	7	950-MFA-03104
Shield Bar PR5 WH/BK	8	
	9	SPARE
Shield Bar PR6 WH/BK	10	
	11	SPARE
	12	

Shield Bar — I.E.

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03103

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

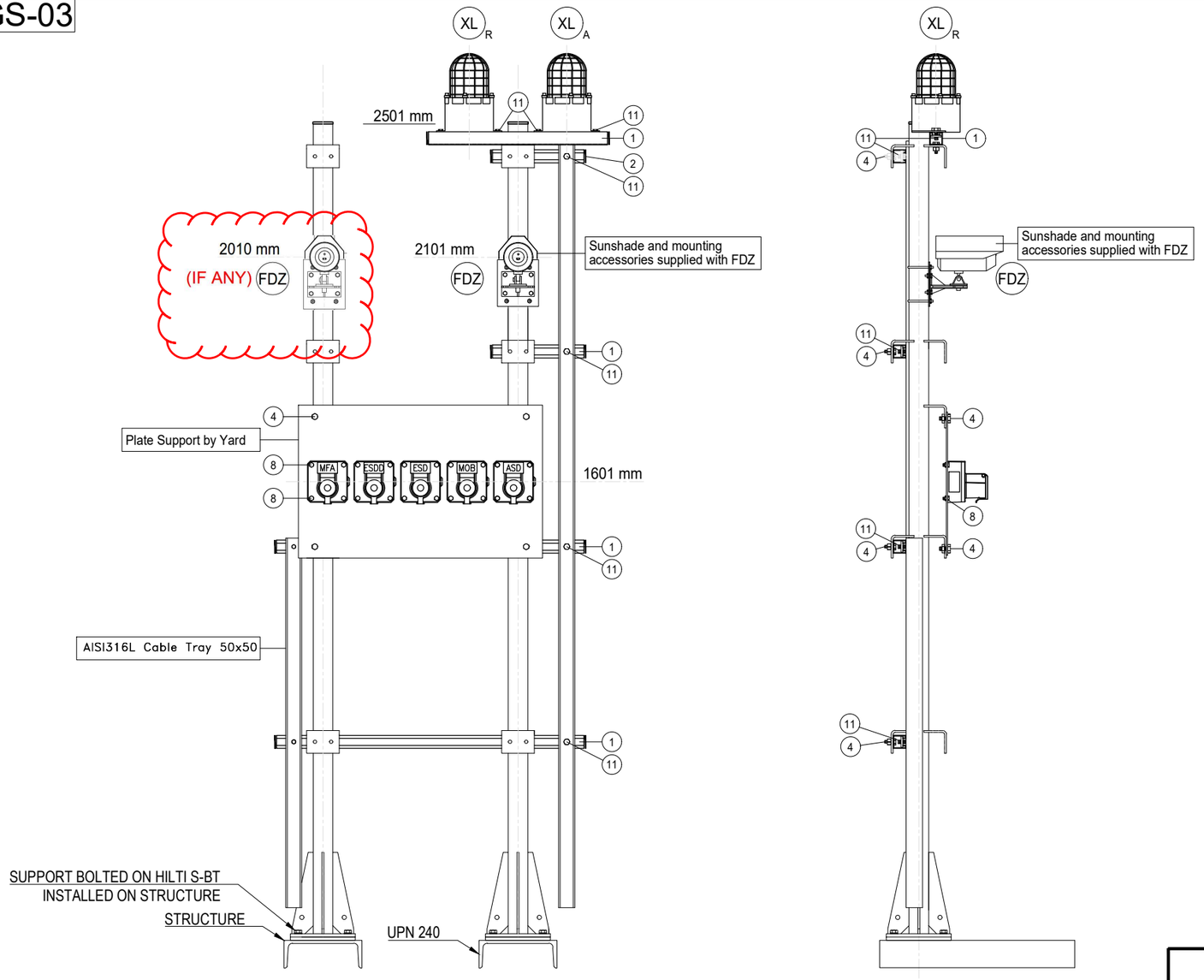
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 038	REV. 01

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

FGS-03

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	6m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	18
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	20
11	AISI 316L SPRING NUT M8 FOR U-CHANNEL 41X41 + BOLT M8x35 + WASHER M8	10

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03103
	XL_R	BEACON - RED	950-XL-03104
	FDZ	FLAME DETECTOR	950-FDZ-03104 & 950-FDZ-02104
	ESDD	MANUAL CALL POINT CONNECTED TO SIS	950-ESDD-03101
	ESD	MANUAL CALL POINT CONNECTED TO SIS	950-ESD-03101
	MOB	MANUAL CALL POINT CONNECTED TO SIS	950-MOB-03101
	ASD	MANUAL CALL POINT CONNECTED TO SIS	950-ASD-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03104

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_E	13/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

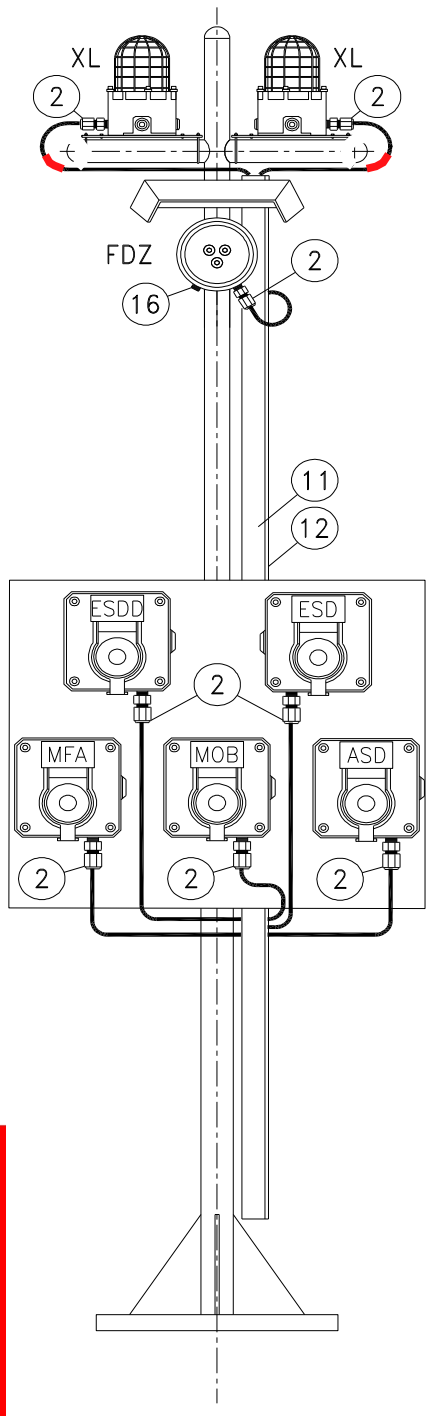
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 022	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-XL-03103 (AMBER)
	950-XL-03104 (RED)
	950-FDZ-063104
	950-ESDD-03101
	950-ESD-03101
	950-MFA-03104
	950-MOB-03101
	950-ASD-03101

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

REV.:	DATE:	SIGNATURE:
2_D	13/11/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	8

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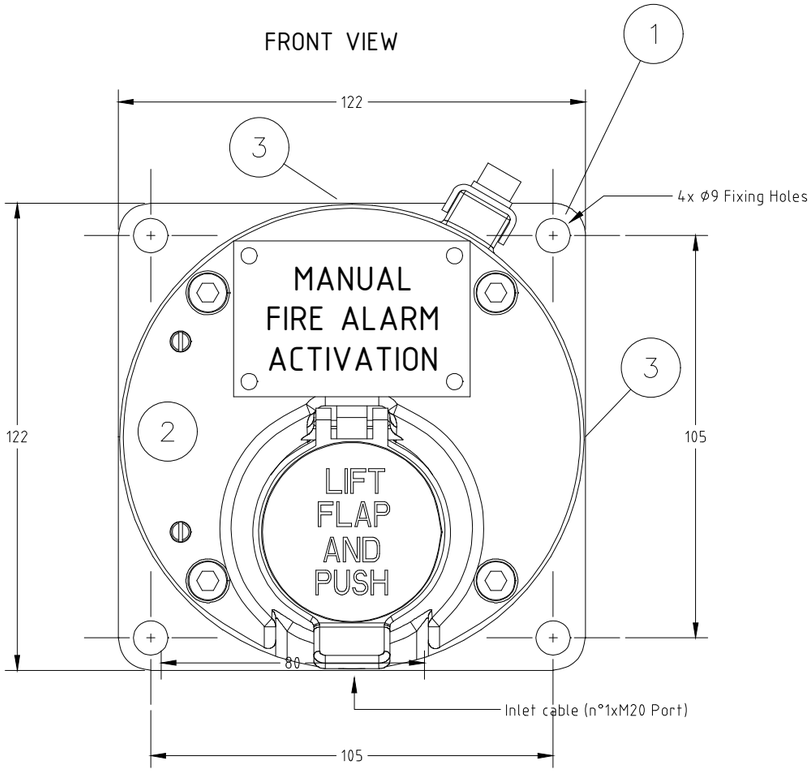
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED)

ITEM	DESCRIPTIONS	NR
1	Manual Call Point (Manual Fire Alarm) (Red), MEDC SM87PBLSD1B1ROYHDRZ	1
2	Stainless Steel Name Plate	1
3	Stop Plug M20 Ex d AISI 316	2
4		
5		
6		
7		
8		
9		
10		

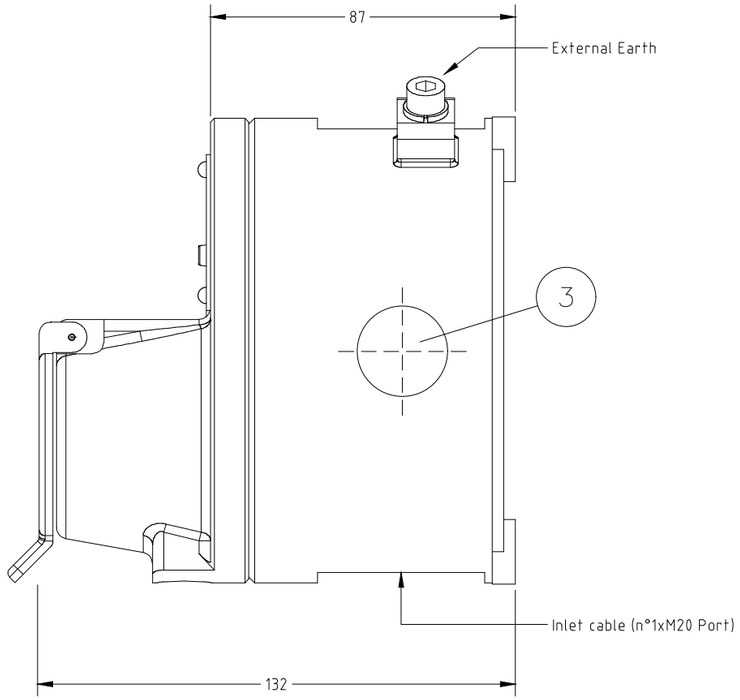
INSTALLATION QUANTITY

21

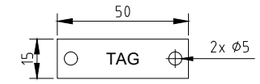
FRONT VIEW



SIDE VIEW



2 STAINLESS STEEL NAME PLATE DETAILS

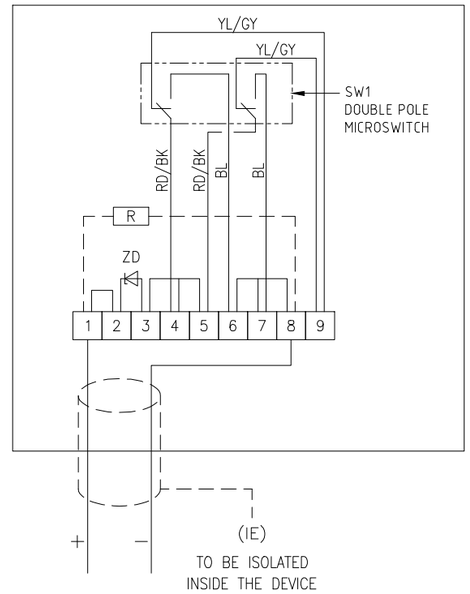


NOTE 5

WIRING

TERMINAL STRIP

ZD= ZENER 1N5339B 5.6V
R= 36 KOhm



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED)

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 015 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

MANUAL CALL POINT (MANUAL FIRE ALARM) (RED) – TAG

POS.	TAG NUMBER
1	950-MFA-01101
2	950-MFA-01102
3	950-MFA-01103
4	950-MFA-02101
5	950-MFA-03101
6	950-MFA-03102
7	950-MFA-03103
8	950-MFA-03104
9	950-MFA-04101
10	950-MFA-04102
11	950-MFA-04201
12	950-MFA-04202
13	950-MFA-04203
14	950-MFA-05101
15	950-MFA-05102
16	950-MFA-05103
17	950-MFA-05104
18	950-MFA-06101
19	950-MFA-06102
20	950-MFA-06201
21	950-MFA-07101

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED) – TAG

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 016 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

MANUAL FIRE ALARM

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-MFA-01101	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
2	950-MFA-01102	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
3	950-MFA-01103	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
4	950-MFA-02101	FZ-02 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
5	950-MFA-03101	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
6	950-MFA-03102	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
7	950-MFA-03103	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
8	950-MFA-03104	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
9	950-MFA-04101	FZ-04 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
10	950-MFA-04102	FZ-04 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
11	950-MFA-04201	FZ-04 MFA ACTIVATION - B-400 INDOOR	MANUAL FIRE ALARM ACTIVATION
12	950-MFA-04202	FZ-04 MFA ACTIVATION - B-300 INDOOR	MANUAL FIRE ALARM ACTIVATION
13	950-MFA-04203	FZ-04 MFA ACTIVATION - B-200 INDOOR	MANUAL FIRE ALARM ACTIVATION
14	950-MFA-05101	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
15	950-MFA-05102	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
16	950-MFA-05103	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
17	950-MFA-05104	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
18	950-MFA-06101	FZ-06 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
19	950-MFA-06102	FZ-06 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
20	950-MFA-06201	FZ-06 MFA ACTIVATION - B-100 INDOOR	MANUAL FIRE ALARM ACTIVATION
21	950-MFA-07101	FZ-07 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION

File: 1724000821-IN-DS-00004-02.xlsx
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SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

The units are both easy to install and maintain. Intrinsically safe Ex ia and flameproof Ex d versions of each model are available.

A choice of either stainless steel or alloy makes the range suitable for either the offshore or onshore industries. Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

ATEX IECEx cULus LISTED ULC INMETRO CSA DNV·GL MARITIME CCC

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Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

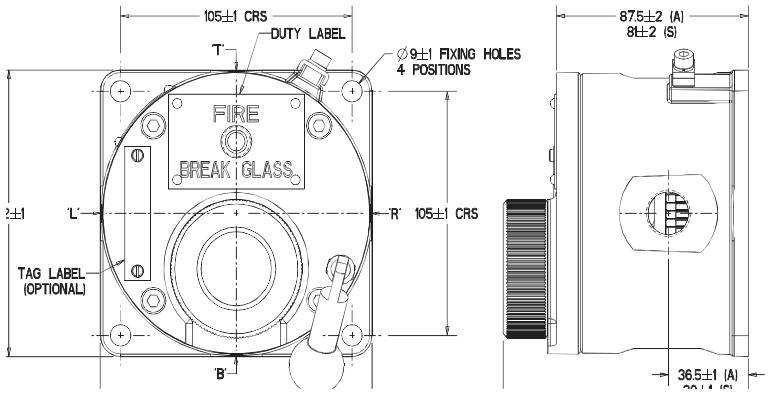
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

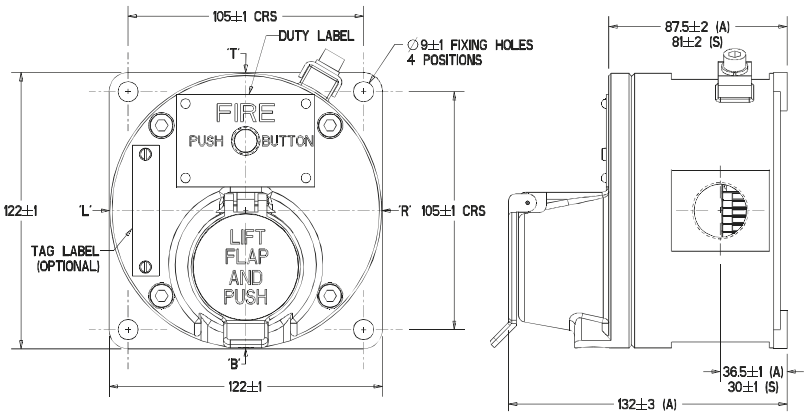
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy	
Finish	Paint finish as standard or to customer specification	
Voltage	Ex d 24V a.c./d.c. Ex ia 28V	
Rating	2A	
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)	
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA	
Certified temp	Ex d* Ex ia* UL CSA Explosion proof - Class 1, Div 1 & 2. CSA - Ex d IIC CSA Intrinsically safe - Class 1, Div 1 & 2 *Note: includes ATEX, IECEx & INMETRO versions	–55°C to +70°C. –55°C to +60°C –20°C to +55°C (LED version only) –40°C to +70°C, –20°C to +55°C (LED version only) –50°C to +55°C –55°C to +70°C –50°C to +40°C
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)	
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)	
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side	
Terminals	Will accept up to 1·5mm² cable	
Resistor values	470R minimum (d.c. & I.S. units only)	

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*

	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*

	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification

	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries

	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label

	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label

	Code
Required	Y*
Not required	N

*Please specify

Options

	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

*Please specify

Finish

	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

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
309	02	950-MFA-03104	MANUAL FIRE ALARM	FZ-03 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/8	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
310	02	950-MFA-04101	MANUAL FIRE ALARM	FZ-04 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/9	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
311	02	950-MFA-04102	MANUAL FIRE ALARM	FZ-04 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/10	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
312	02	950-MFA-04201	MANUAL FIRE ALARM	FZ-04 MFA ACTIVATION - B-400 INDOOR	MEDC	SM87PBL	225420465/20/11	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
313	02	950-MFA-04202	MANUAL FIRE ALARM	FZ-04 MFA ACTIVATION - B-300 INDOOR	MEDC	SM87PBL	225420465/20/12	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
314	02	950-MFA-04203	MANUAL FIRE ALARM	FZ-04 MFA ACTIVATION - B-200 INDOOR	MEDC	SM87PBL	225420465/20/13	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
315	02	950-MFA-05101	MANUAL FIRE ALARM	FZ-05 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/14	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
316	02	950-MFA-05102	MANUAL FIRE ALARM	FZ-05 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/15	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
317	02	950-MFA-05103	MANUAL FIRE ALARM	FZ-05 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/16	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
318	02	950-MFA-05104	MANUAL FIRE ALARM	FZ-05 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/17	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
319	02	950-MFA-06101	MANUAL FIRE ALARM	FZ-06 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/18	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
320	02	950-MFA-06102	MANUAL FIRE ALARM	FZ-06 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/19	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
321	02	950-MFA-06201	MANUAL FIRE ALARM	FZ-06 MFA ACTIVATION - B-100 INDOOR	MEDC	SM87PBL	225420465/20/20	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
322	02	950-MFA-07101	MANUAL FIRE ALARM	FZ-07 MFA ACTIVATION	MEDC	SM87PBL	225420465/20/21	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
323	02	950-ASD-01101	ABANDON ACTIVATION	FZ-01 ABANDON SHUTDOWN ACTIVATION	MEDC	SM87PBL	225420465/30/1	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
324	02	950-ASD-03101	ABANDON ACTIVATION	FZ-03 ABANDON SHUTDOWN ACTIVATION	MEDC	SM87PBL	225420465/30/2	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
325	02	950-ASD-04101	ABANDON ACTIVATION	FZ-04 ABANDON SHUTDOWN ACTIVATION	MEDC	SM87PBL	225420465/30/3	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
326	02	950-ASD-06101	ABANDON ACTIVATION	FZ-06 ABANDON SHUTDOWN ACTIVATION	MEDC	SM87PBL	225420465/30/4	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
327	02	950-ASD-07101	ABANDON ACTIVATION	FZ-07 ABANDON SHUTDOWN ACTIVATION	MEDC	SM87PBL	225420465/30/5	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
328	02	950-MOB-01101	MAN OVER BOARD ACTIVATION	FZ-01 MAN OVER BOARD ACTIVATION	MEDC	SM87PBL	225420465/30/6	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
329	02	950-MOB-03101	MAN OVER BOARD ACTIVATION	FZ-03 MAN OVER BOARD ACTIVATION	MEDC	SM87PBL	225420465/30/7	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
330	02	950-MOB-04101	MAN OVER BOARD ACTIVATION	FZ-04 MAN OVER BOARD ACTIVATION	MEDC	SM87PBL	225420465/30/8	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
331	02	950-MOB-06101	MAN OVER BOARD ACTIVATION	FZ-06 MAN OVER BOARD ACTIVATION	MEDC	SM87PBL	225420465/30/9	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
332	02	950-MOB-07101	MAN OVER BOARD ACTIVATION	FZ-07 MAN OVER BOARD ACTIVATION	MEDC	SM87PBL	225420465/30/10	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
333	02	950-ESD-01101	EMERGENCY SHUTDOWN ACTIVATION	FZ-01 ESD-1 PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/11	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
334	02	950-ESD-03101	EMERGENCY SHUTDOWN ACTIVATION	FZ-03 ESD-1 PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/12	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
335	02	950-ESD-04101	EMERGENCY SHUTDOWN ACTIVATION	FZ-04 ESD-1 PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/13	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
336	02	950-ESD-06101	EMERGENCY SHUTDOWN ACTIVATION	FZ-06 ESD-1 PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/14	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES

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: **Baseefa03ATEX0075X – Issue 21**

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **SM87 Alarm Stations**

5 Manufacturer: **Eaton MEDC Limited**

6 Address: **Unit B, Sutton Parkway, Oddicroft Lane, Sutton-in-Ashfield, NG17 5FB**
United Kingdom

7 This re-issued certificate extends EC Type Examination Certificate No. **Baseefa03ATEX0075** 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:

II 2 GD Ex db IIC T* Gb Tamb -55°C to +°C Ex tb IIIC T**°C Db IP66/67 Tamb -55°C to +**°C**

SGS Fimko Oy Customer Reference No. **0676** Project File No. **22/0235**

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Mikko Välimäki
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number Baseefa03ATEX0075X – Issue 21

15 Description of Product

The Range of SM87 Alarm Stations comprises a cylindrical enclosure a square base with an irregular shaped cover secured by 4 off screws of grade A4-70 or A4-80 stainless steel. The base and cover may be manufactured from either aluminium or stainless steel.

The cover is fitted with an actuator mechanism which may be operated by either a push button or break glass function dependant on the external actuator assembly.

The units may be supplied by the manufacturer in an assembly of up to five interconnected enclosures using cable bushings to EPS13ATEX1619U.

The range of Type SM87 Alarm Stations comprises:-

Type BGLD – A Breakglass unit with latching mechanism The interior of the enclosure comprises up to two micro-switches, mounted on the inside of the cover, and up to twelve rail mounted terminals fitted to the enclosure base, and rated up to 24V, 2A.

Type LBGLD - A Breakglass unit with protective lift flap and latching mechanism. The interior and rating as per the Type BGLD.

Type PBLD – A Push Button unit with latching mechanism. The interior and rating as per the Type BGLD.

Type PBMD – A Push button unit with momentary mechanism. The interior and rating as per the Type BGLD.

Type SM87 EOL Unit A – The interior comprises up to two micro-switches, mounted on the inside of the cover, and up to twelve rail mounted terminals fitted to the enclosure base with the addition of an end of line module rated 24V 0.5A.

Type SM87 Addressable Unit B –The interior comprises up to two micro-switches, mounted on the inside of the cover and a Servoteknikk addressable callpoint PCB, rated up to 24V 0.5A.

Type SM87 Addressable Unit G –The interior comprises up to two micro-switches, mounted on the inside of the cover and a Tyco addressable callpoint PCB, rated up to 24V 0.5A.

Type SM87 Addressable Unit F – The interior comprises up to two micro-switches, mounted on the inside of the cover and an Autronica addressable callpoint PCB, rated up to 24V 0.5A.

Type SM87 XP950 Module Unit – The interior comprises up to two micro-switches, mounted on the inside of the cover and an Apollo PCB, rated up to 24V 1.0A.

Type SM87 Addressable Unit H - The interior comprises a Hochiki addressable callpoint PCB and up to 7 terminals rated at up to 24V 0.2A.

Type SM87 Addressable Unit J - The interior comprises a Ziton addressable module, up to 5 terminals and 2 x 2.5W resistors rated at up to 24V 0.1A, 7W.

Type SM87PBD MCR-CUBE EOL Unit – an SM87 Alarm Station with switches mounted on the underside of the cover and an end of line (EOL) module and terminals mounted in the base, rated up to 24V, 0.5A.

Type SM87 Omron Relay Unit A – Type SM87 Alarm Station comprising an alternative interior which includes a relay callpoint, Omron Type SPDT G2R and up to 6 Weidmuller AKZ 1.5 terminals, rated up to 24V, 2A.

Type SM87 Addressable Unit C - SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable printed circuit board (PCB) mounted in the base, rated up to 28V, 0.5A

Type SM87 Addressable Module G – with switches mounted on the underside of the cover and an alternative addressable Tyco module mounted in the base, rated up to 24V, 0.02A.

Type SM87 Addressable Module I – with switches mounted on the underside of the cover and an alternative addressable Apollo module mounted in the base, rated up to 24V, 0.02A.

Type SM87 Addressable Module K – with switches mounted on the underside of the cover and an alternative addressable Tyco module mounted on the base, rated up to 24V, 0.1A.

The alarm stations are coded:-

Ex db IIC T6 Gb Tamb -55°C to +55°C

Ex tb IIIC T85°C Db IP66/67 Ta -55°C to +55°C

Or

Ex db IIC T5 Gb Tamb -55°C to +70°C

Ex tb IIIC T100°C Db IP66/67 Ta -55°C to +70°C

Cable entry holes are provided as specified on the certified drawings for the accommodation of flameproof cable entry devices, with or without the interposition of a flameproof thread adapter. Unused entries are to be fitted with suitable certified flameproof stopping plugs.

The cable entry devices, thread adapters and stopping plugs shall be suitable for the equipment, the cable and the conditions of use and shall be certified as Equipment (not a Component) under an EC Type Examination Certificate to Directive 2014/34/EU.

When used in an explosive dust atmosphere the cable entry devices shall maintain the ingress protection of the enclosure.

16 Report Number

See certificate history.

17 Specific Conditions of Use

1. Potential electrostatic charging hazard – see instructions.

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, and conformity is demonstrated in the report:

Clause	Subject
1.2.7	LVD type requirements
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Sheet	Issue	Date	Description
562-774	1 - 2	F	08-08-23	ATEX Certification Detail SM87BGLD, SM87PBLD, SM87LBGLD & PBMD
562-778	1	B	08-08-23	SM87BG ATEX Certification Label
562-779	1	B	08-08-23	SM87PB ATEX Certification Label

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
562-775	1 & 2	E	12/12/19	SM87PBD SM87BGD ATEX OPTIONAL MODULE DETAILS
562-851		A	25.11.10	General Arrangement, SM87PBD MCR-CUBE EOL UNIT

20 Certificate History

Certificate No.	Date	Comments
Baseefa03ATEX0075	09 May 2006	The release of the prime certificate. The associated test and assessment against the requirements of EN 50014:1997 + Amendments 1 & 2, EN 50018:2000 + Amendment 1, EN 50281-1-1:1998 is documented in Test Report No. 02(C)0226.
Baseefa03ATEX0075/1	27 January 2004	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an addressable printed circuit board (PCB) mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT B** and is rated up to 24V, 0.5A with a revised Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/2	27 January 2004	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable printed circuit board (PCB) mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT F** and is rated up to 24V, 0.5A with a revised Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/3	29 January 2004	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable printed circuit board (PCB) mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT G** and is rated up to 24V, 0.5A with a revised Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.

Certificate No.	Date	Comments
Baseefa03ATEX0075/4	25 August 2005	To note change in type reference of the addressable callpoint. No report.
Baseefa03ATEX0075/5	14 October 2005	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative printed circuit board mounted in the base. In this form the unit is designated a **SM87 XP950 MODULE UNIT** and is rated up to 24V, 1A with a revised Temperature Classification of T85°C (Tamb = -55°C to +55°C). No report.
Baseefa03ATEX0075/6	05 December 2005	Alternative rating of 48V, 1A for the SM87 Alarm Stations, together with a change to the optional internal resistors. No report.
Baseefa03ATEX0075/7	14 September 2006	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and up to 12 rail mounted terminals and an end of line (EOL) device mounted in the base. In this form the unit is designated a **SM87PBD EOL UNIT A** and is rated up to 24V, 0.5A with a Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/8	10 October 2007	Optional addition of an indicator LED and window assembly to the cover of the push-button and break-glass units. Baseefa certification report 04(C)0562 refers.
Baseefa03ATEX0075/9	07 July 2008	To permit an optional transient voltage suppressor rated up to 5W. No report.
Baseefa03ATEX0075/10	07 January 2009	Alternative arrangement comprising an SM87 Alarm Station with an addressable callpoint mounted on the underside of the cover and an addressable printed circuit board (PCB) module and terminals mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT H** and is rated up to 24V, 0.02A with a Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/11	17 April 2009	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an addressable printed circuit board (PCB) module and terminals mounted in the base. In this form the unit is designated a **SM87 ADDRESSABLE UNIT J** and is rated up to 24V, 0.1A with a Temperature Classification of T85°C (Tamb = -55°C to +55°C) or T100°C (Tamb = -55°C to +70°C). No report.
Baseefa03ATEX0075/12	27 September 2010	To amalgamate the current design and previous variations into one revised set of drawings. No technical changes were carried out. SGS Baseefa certification report GB/BAS/ExTR09.0084/00 refers.

Certificate No.	Date	Comments
Baseefa03ATEX0075/13	23 December 2010	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an end of line (EOL) module and terminals mounted in the base. In this form the unit is designated a **SM87PBD MCR-CUBE EOL UNIT** and is rated up to 24V, 0.5A. No report.
Baseefa03ATEX0075/14	10 May 2012	Variation to the Type SM87 Alarm Station comprising an alternative interior which includes a relay callpoint, Omron Type SPDT G2R and up to 6 Weidmuller AKZ 1.5 terminals. In this form the unit is designated a **Type SM87 Omron Relay Unit A** and is rated up to 24V, 2A. No report.
Baseefa03ATEX0075/15	4 October 2013	To increase the number of resistors rated at up to 470Ω and 0.6W installed in the SM87 from 4 to a maximum of 6 without any increase in power dissipation. SGS Baseefa report GB/BAS/ExTR13.0225/00 refers.
Baseefa03ATEX0075/16	15 October 2013	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable printed circuit board (PCB) mounted in the base. In this form the unit is designated a **SM87 Addressable Unit C** and is rated up to 28V, 0.5A with a Temperature Classification of T85°C (Tamb -55°C to +55°C) or T100°C (Tamb -55°C to +70°C). SGS Baseefa certification report GB/BAS/ExTR13.0232/00 refers.
Baseefa03ATEX0075/17	20 January 2014	Increase in the maximum number of rail mounted terminals to thirteen. SGS Baseefa certification report GB/BAS/ExTR14.0022/00 refers.
Baseefa03ATEX0075/18	22 January 2015	Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable Tyco module mounted in the base. In this form the unit is designated a **SM87 Addressable Module G** and is rated up to 24V, 0.02A with a Temperature Classification of T85°C (Tamb -55°C to +55°C) or T100°C (Tamb -55°C to +70°C). Alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable Apollo module mounted in the base. In this form the unit is designated a **SM87 Addressable Module I** and is rated up to 24V, 0.02A with a Temperature Classification of T85°C (Tamb -55°C to +55°C) or T100°C (Tamb -55°C to +70°C). No report.
Baseefa03ATEX0075/19	23 June 2015	Addition of alternative terminal Type Weidmuller AKZ1.5 to the existing list of terminals; Weidmuller: AKZ4 — Max Number 12 Weidmuller: AKZ1.5 — Max Number 13 Weidmuller: AKZ2.5 — Max Number 13 Phoenix: MBK up to 2.5mm — Max Number 13 SGS Baseefa certification report GB/BAS/ExTR15.0189/00 refers.

Certificate No.	Date	Comments
Baseefa03ATEX0075/20	31 January 2020	To introduce an alternative arrangement comprising an SM87 Alarm Station with switches mounted on the underside of the cover and an alternative addressable Tyco module mounted on the base. In this form the unit is designated a **SM87 Addressable Module K** and is rated up to 24V, 0.1A with a temperature classification of T85°C (Tamb -55°C to +55°C) or T100°C (Tamb -55°C to +70°C). SGS Baseefa certification report 20(C)0064 refers.
Baseefa03ATEX0075X Issue 21	14 November 2023	To assess the SM87 Alarm Stations against EN IEC 60079-0:2018, EN 60079-1:2014 and EN 60079-31:2014. SGS Baseefa certification report GB/BAS/ExTR22.0113/00 refers.
For drawings applicable to each issue, see original of that issue.		

ITEM	Tag	950-XL-03103	: FZ-03 Gas Beacon Activation	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD
TASK	code	C10001554	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.**		225420465/40/04			
Manufacturer	Eaton MEDC			**Model**		SM87LEDS			
Cert No.	Baseefa 03 ATEX 0222			**Equipment Ambient Temp.**		-55°C to +55°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	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	PL	
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	950-XL-03103	: FZ-03 Gas Beacon Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001554	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	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	PL	
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	OK	
	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	950-XL-03103	: FZ-03 Gas Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001554	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

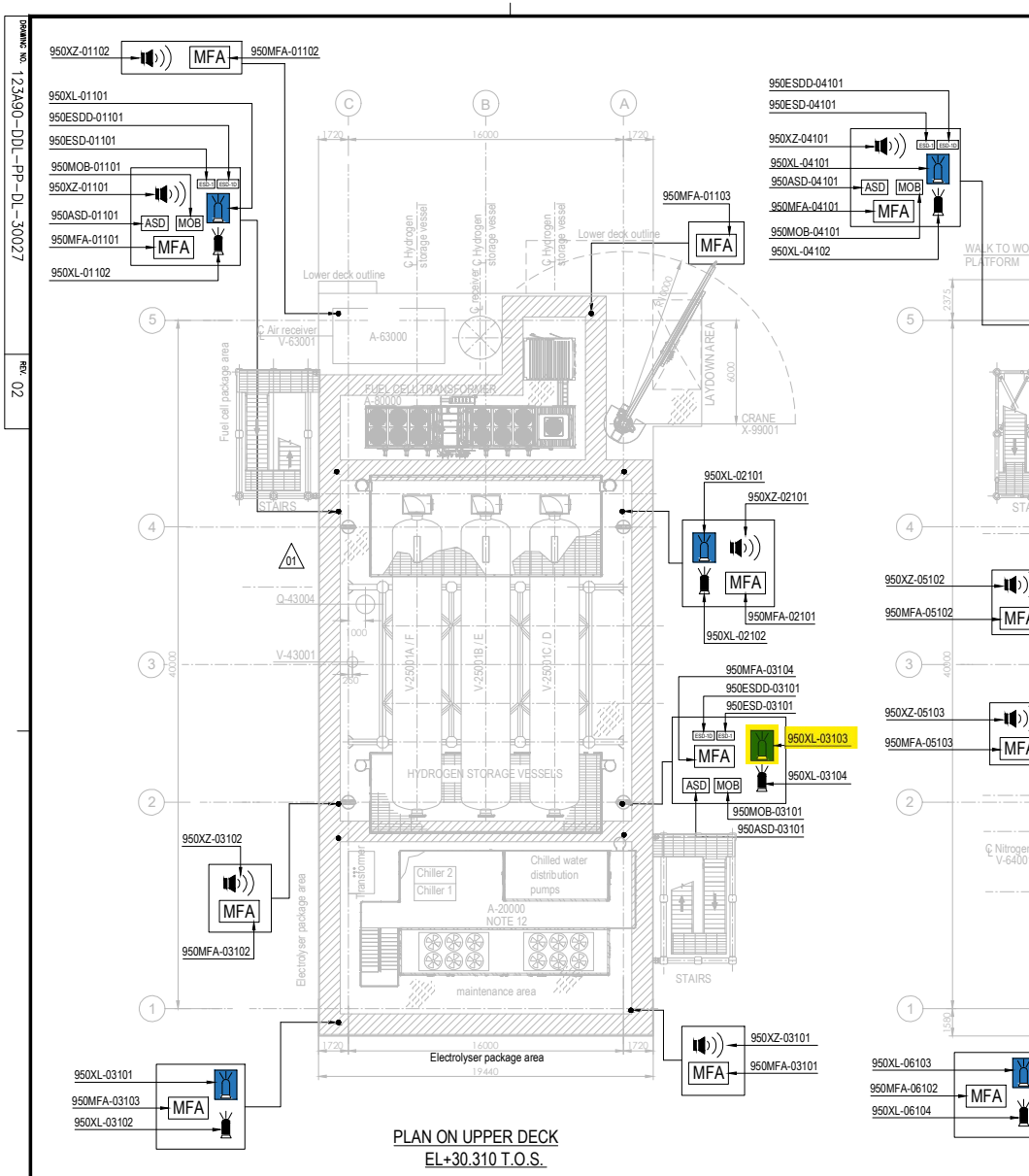
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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	Francesco Zucca	Alessio Polo	
Date	2024-12-11	2024-12-16	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-11T15:24:06.445Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-16T16:20:31.219Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

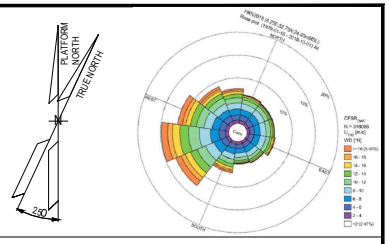
REV. 02



EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.
6. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_C	03/12/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

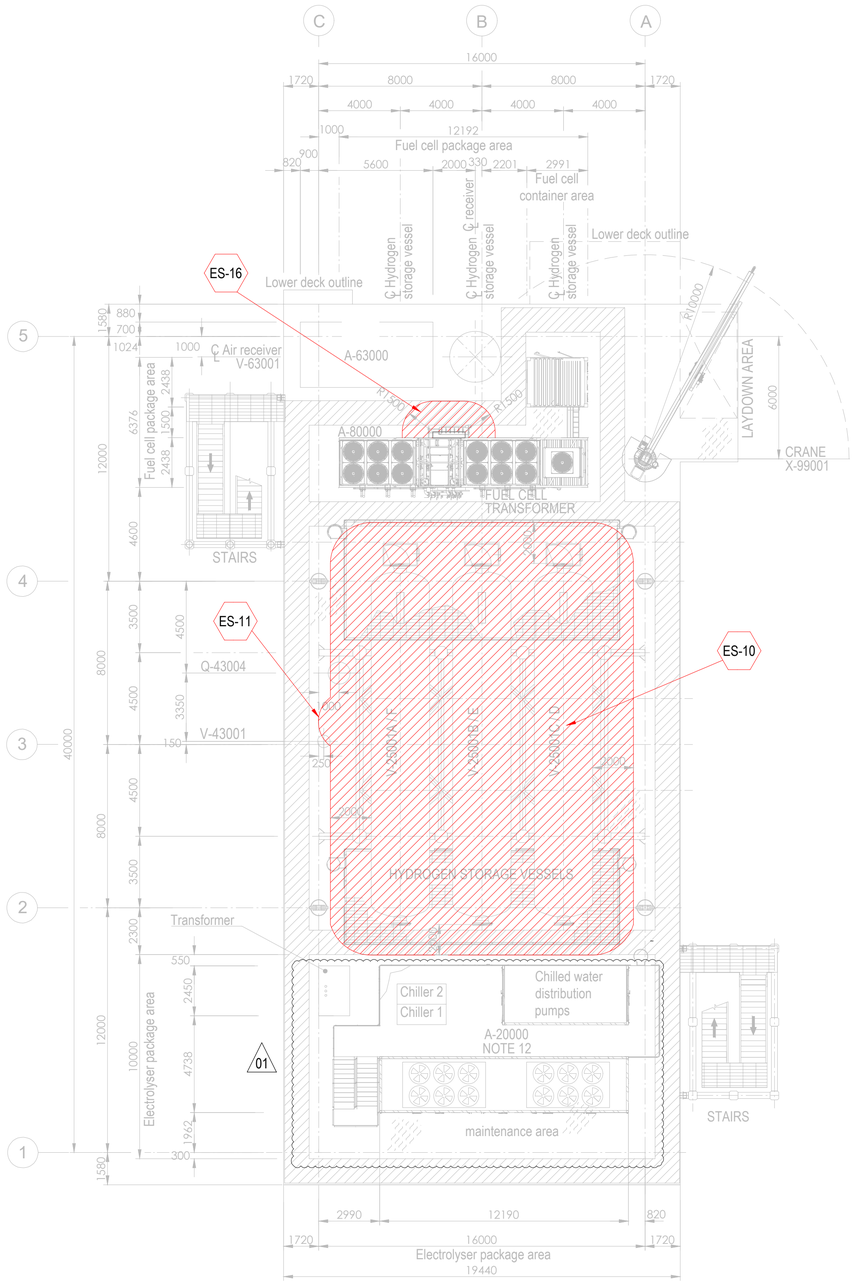
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

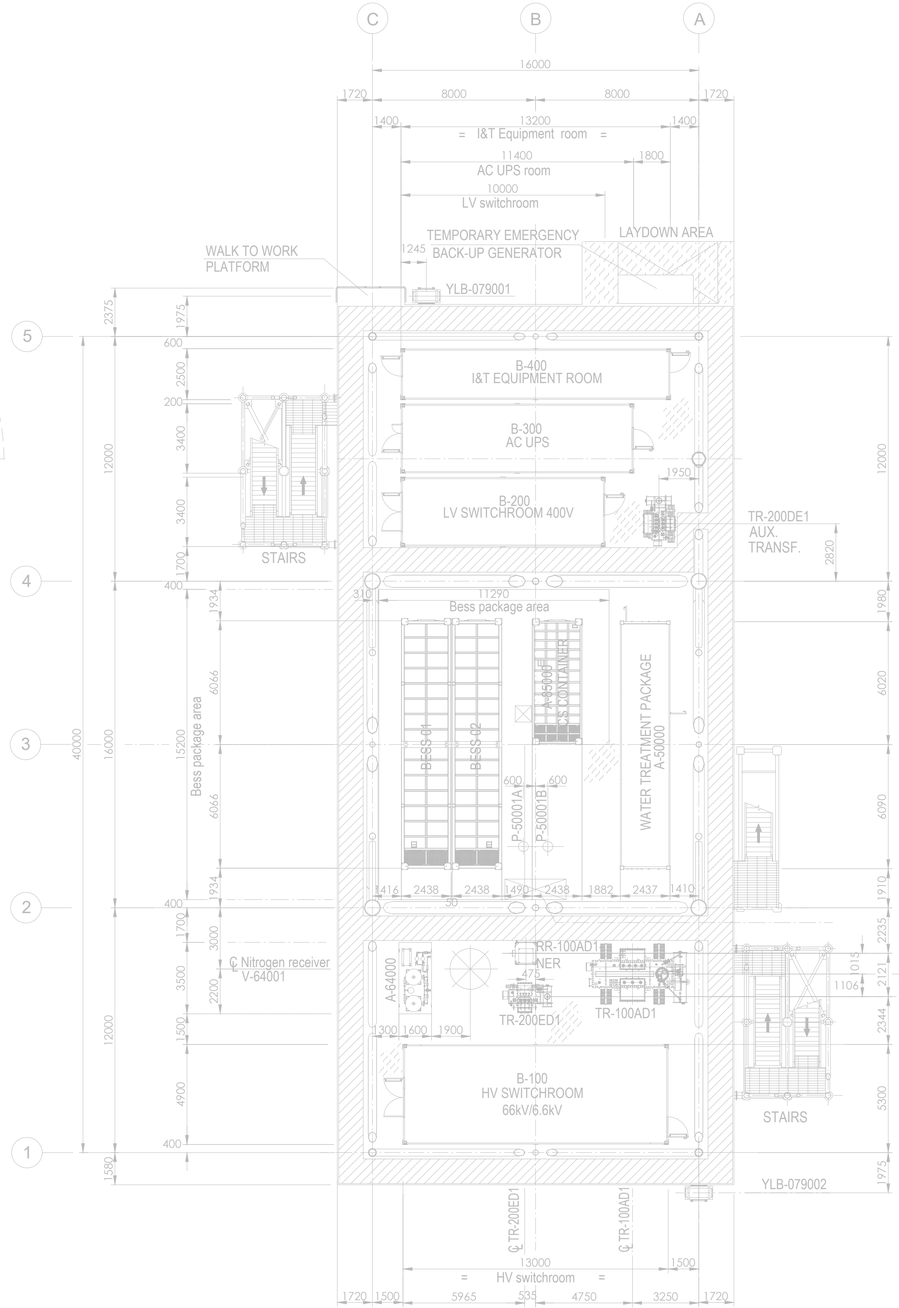
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 01



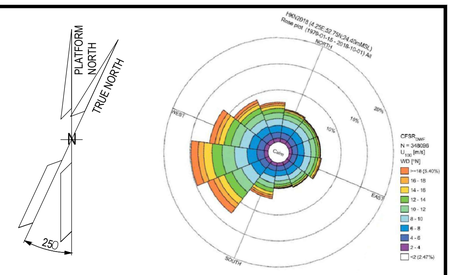
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

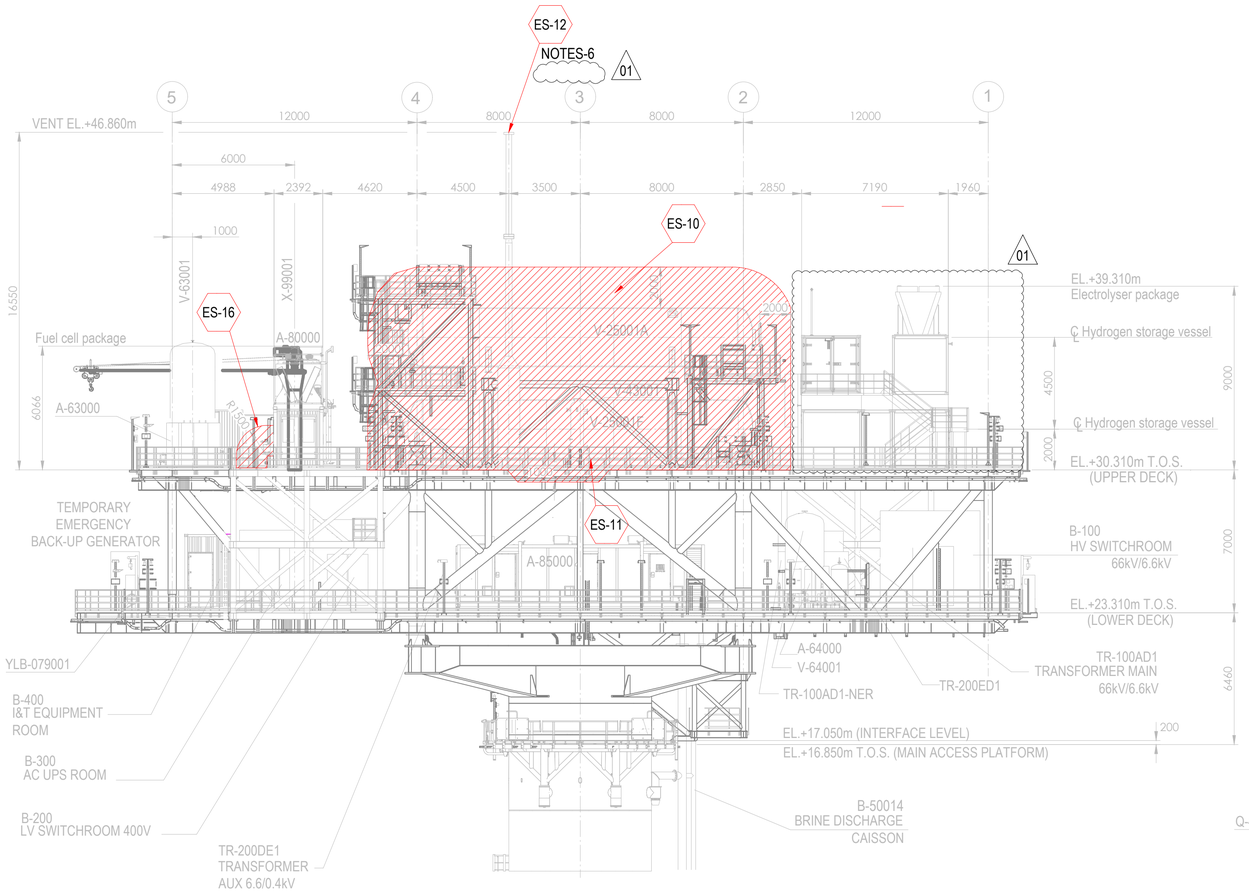
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

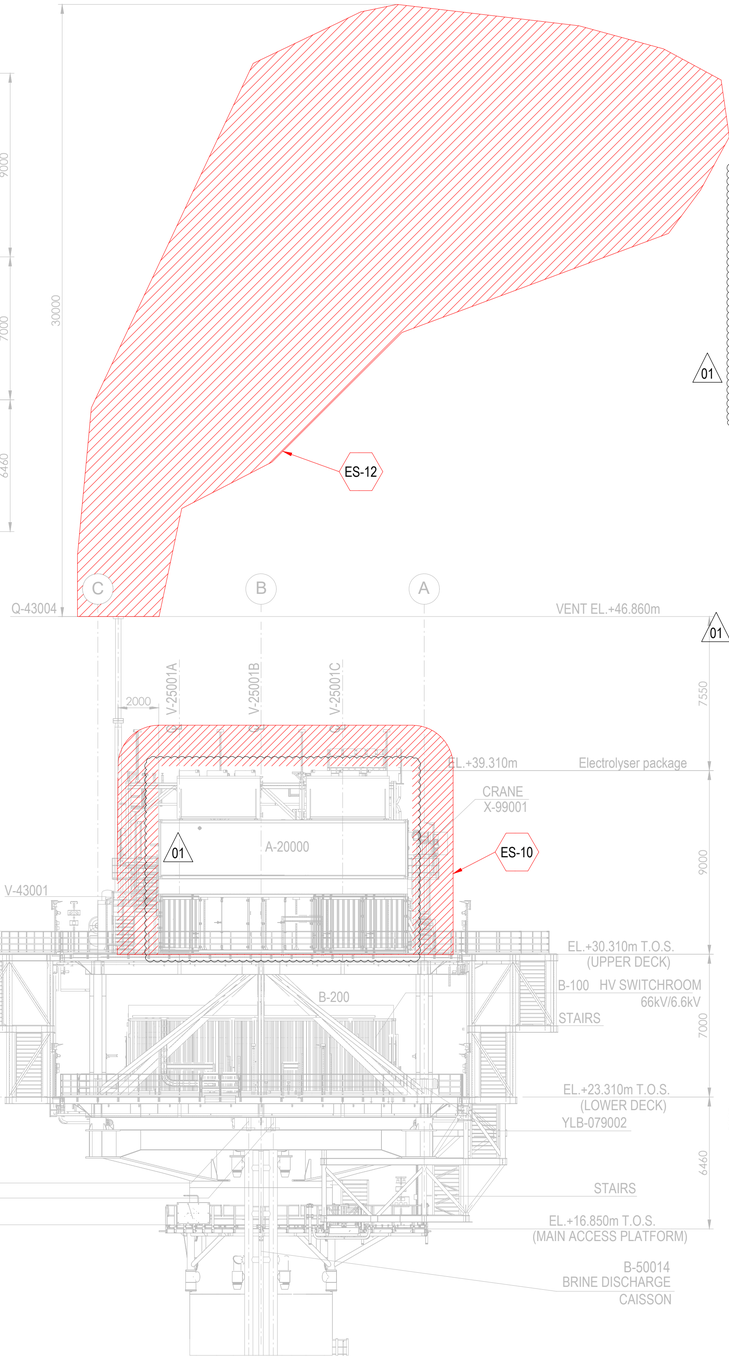
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



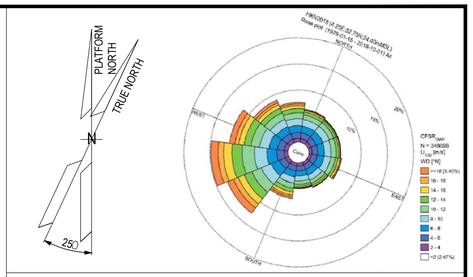
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>

INSTRUMENTS		JUNCTION BOX 950-JE-03104	MULTICABLE No.	MARSHALLING CABINET B400-FGS-002
950-XZ-03101	C-950-XZ-03101/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TB-1 1BK 2BK SH	950-JE-03104/B400-FGS-002 12x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	TB-950-JE-03104 1BK 2BK 950-XZ-03101
950-XZ-03102	C-950-XZ-03102/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	3BK 4BK SH		3BK 4BK 950-XZ-03102
950-XL-03101	C-950-XL-03101/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	5BK 6BK SH		5BK 6BK 950-XL-03101
950-XL-03102	C-950-XL-03102/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	7BK 8BK SH		7BK 8BK 950-XL-03102
950-XL-03103	C-950-XL-03103/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	9BK 10BK SH		9BK 10BK 950-XL-03103
950-XL-03104	C-950-XL-03104/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	11BK 12BK SH OS		11BK 12BK 950-XL-03104

Shield Bar

I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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

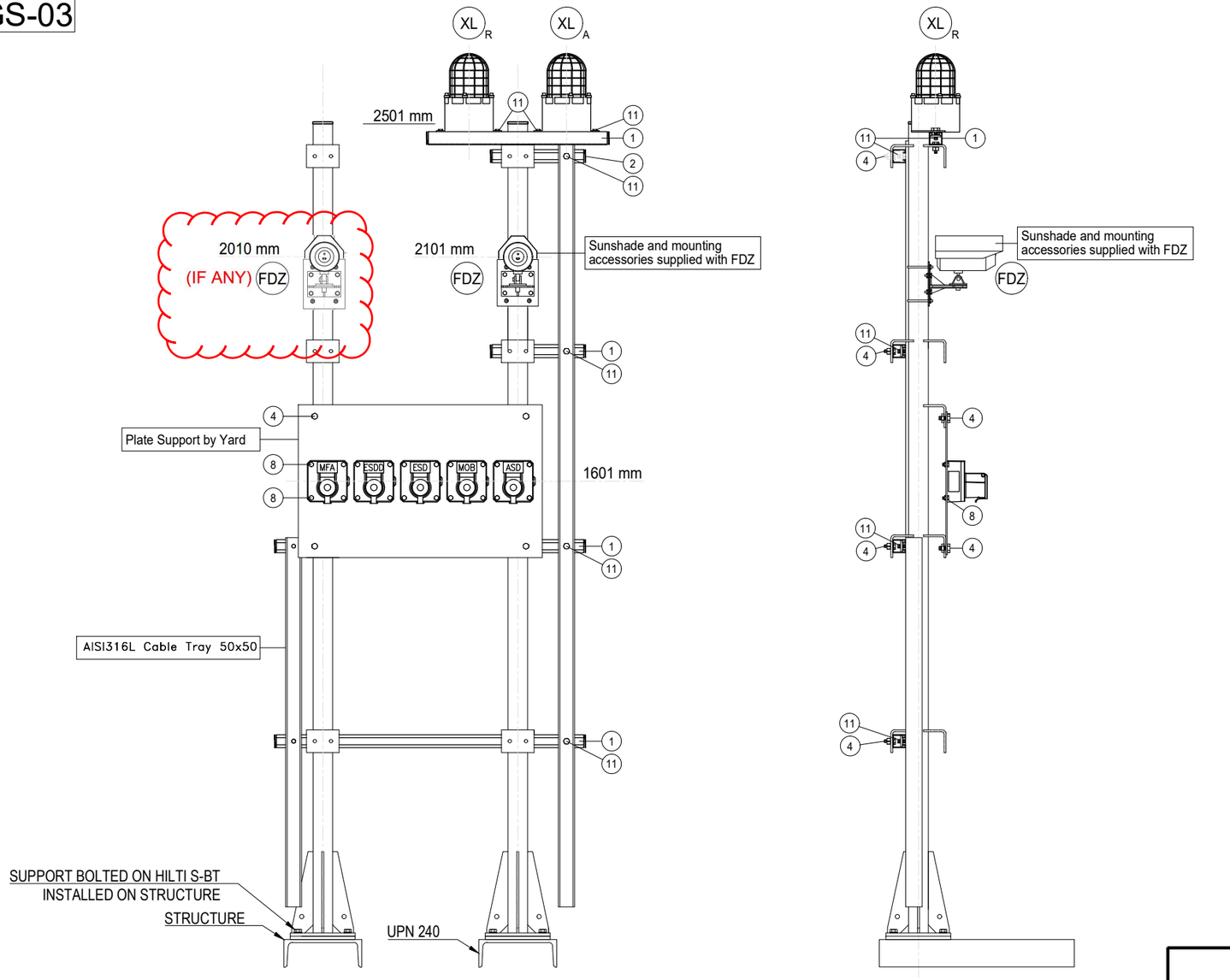
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 066	REV. 01

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

FGS-03

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	6m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	18
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	20
11	AISI 316L SPRING NUT M8 FOR U-CHANNEL 41X41 + BOLT M8x35 + WASHER M8	10

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03103
	XL_R	BEACON - RED	950-XL-03104
	FDZ	FLAME DETECTOR	950-FDZ-03104 & 950-FDZ-02104
	ESDD	MANUAL CALL POINT CONNECTED TO SIS	950-ESDD-03101
	ESD	MANUAL CALL POINT CONNECTED TO SIS	950-ESD-03101
	MOB	MANUAL CALL POINT CONNECTED TO SIS	950-MOB-03101
	ASD	MANUAL CALL POINT CONNECTED TO SIS	950-ASD-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03104

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_E	13/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

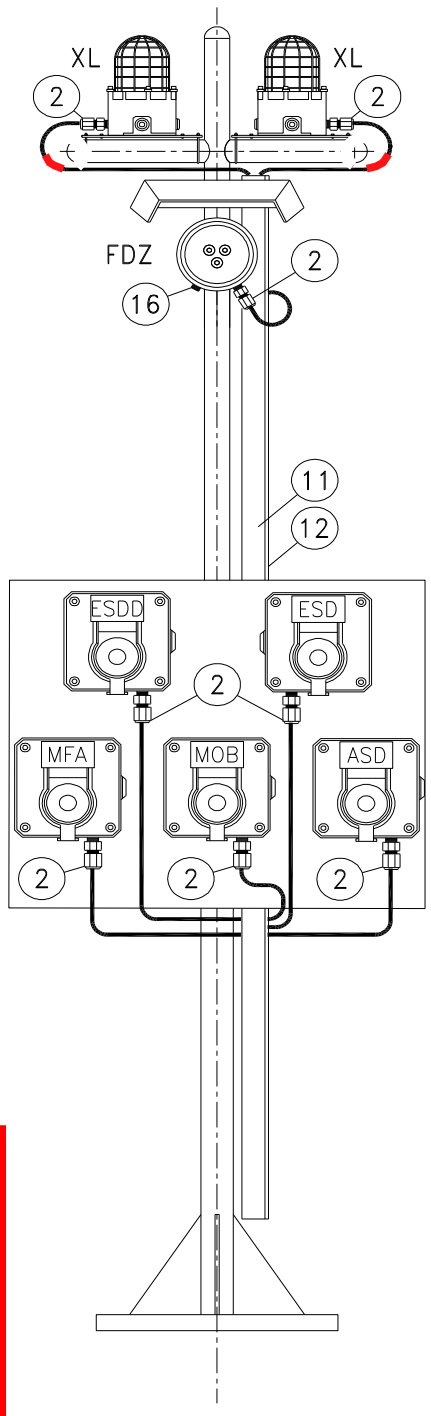
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 022	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-XL-03103 (AMBER)
	950-XL-03104 (RED)
	950-FDZ-063104
	950-ESDD-03101
	950-ESD-03101
	950-MFA-03104
	950-MOB-03101
	950-ASD-03101

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

REV.:	DATE:	SIGNATURE:
2_D	13/11/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	8

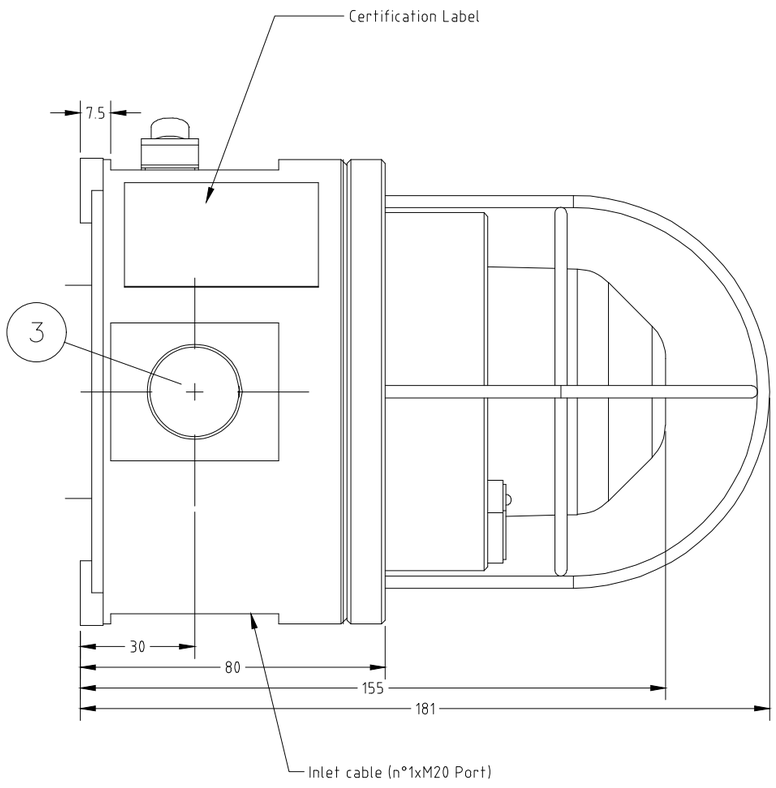
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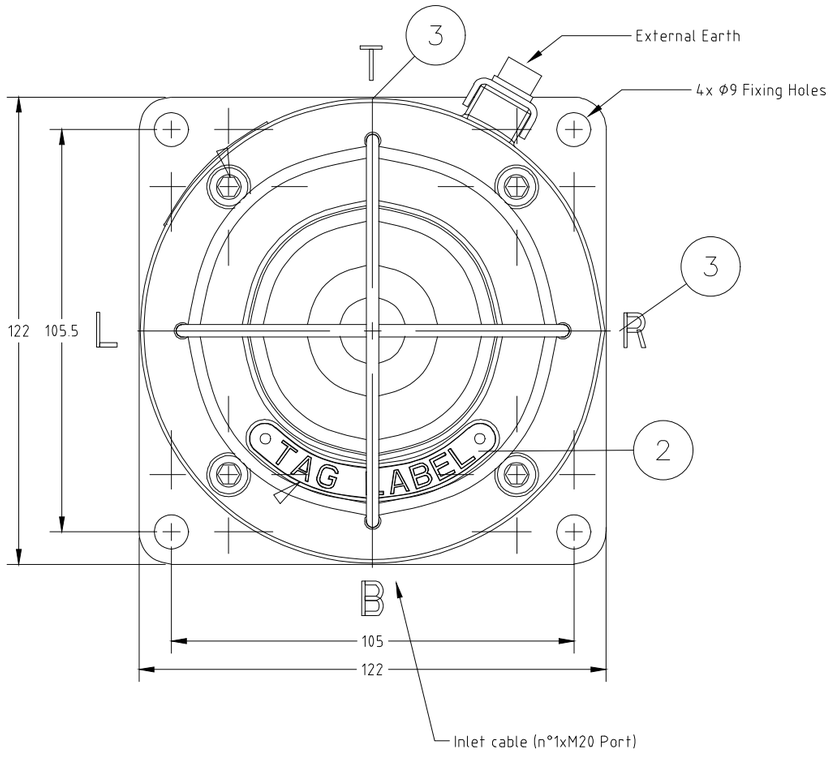
GAS FLASH BEACON (AMBER)

ITEM	DESCRIPTIONS	NR
1	Gas Flash Beacon (Amber), MEDC SM87LEDSB024AY1B1RYNRZZZ	1
2	Stainless Steel Name Plate	1
3	Stop Plug M20 Ex d AISI 316	2
4		
5		
6		
7		
8		
9		
10		

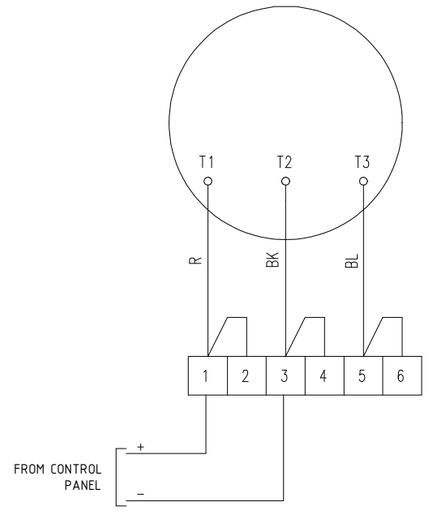
INSTALLATION
QUANTITY

13





WIRING



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
GAS FLASH BEACON (AMBER)

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 019

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

GAS FLASH BEACON (AMBER) – TAG

POS.	TAG NUMBER
1	950-XL-01101
2	950-XL-02101
3	950-XL-03101
4	950-XL-03103
5	950-XL-04101
6	950-XL-04103
7	950-XL-04201
8	950-XL-04203
9	950-XL-04205
10	950-XL-06101
11	950-XL-06103
12	950-XL-06201
13	950-XL-07101

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
GAS FLASH BEACON (AMBER) – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 020

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

GAS FLASH BEACON (AMBER)

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-XL-01101	FZ-01 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
2	950-XL-02101	FZ-02 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
3	950-XL-03101	FZ-03 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
4	950-XL-03103	FZ-03 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
5	950-XL-04101	FZ-04 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
6	950-XL-04103	FZ-04 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
7	950-XL-04201	FZ-04 GAS BEACON ACT. - B-400 INDOOR	FLAMMABLE GAS ALARM
8	950-XL-04203	FZ-04 GAS BEACON ACT. - B-300 INDOOR	FLAMMABLE GAS ALARM
9	950-XL-04205	FZ-04 GAS BEACON ACT. - B-200 INDOOR	FLAMMABLE GAS ALARM
10	950-XL-06101	FZ-06 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
11	950-XL-06103	FZ-06 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
12	950-XL-06201	FZ-06 GAS BEACON ACT. - B-100 INDOOR	FLAMMABLE GAS ALARM
13	950-XL-07101	FZ-07 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM

File: 1724000821-IN-DS-00004-02.xlsx
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SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

ATEX IECEx cULus INMETRO CQST NAN YANG

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
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NG17 5FB

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Powering Business Worldwide

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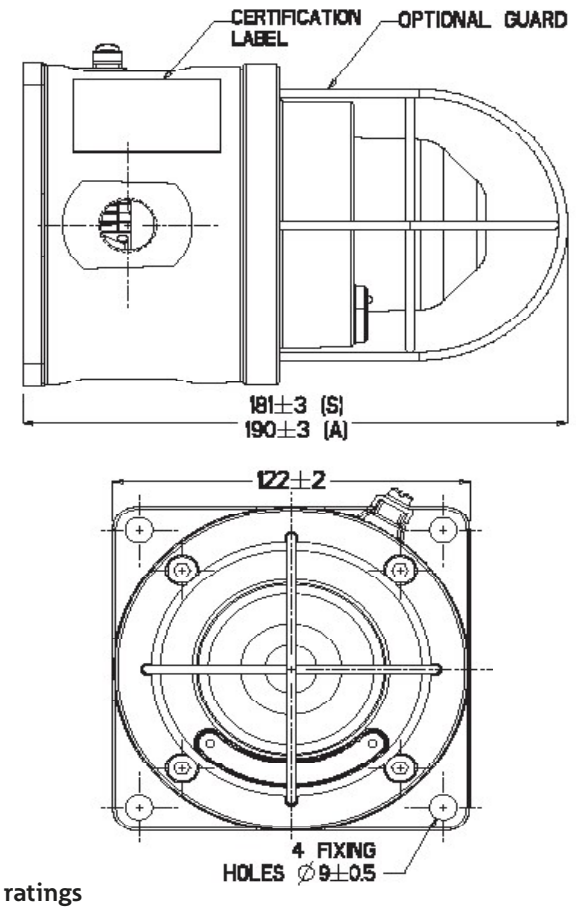
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Ordering requirements

Flash rate: 60fpm

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	A	Y	1B1R	Y	N	R

Model

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Certification

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Voltage

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Lens/LED colour

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Guard

Guard	Code
None	N
Yes	Y

Entries

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Tag/duty

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Options

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

Finish

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

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
337	02	950-ESD-07101	EMERGENCY SHUTDOWN ACTIVATION	FZ-07 ESD-1 PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/15	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
338	02	950-ESDD-01101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-01 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/16	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
339	02	950-ESDD-03101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-03 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/17	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
340	02	950-ESDD-04101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-04 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/18	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
341	02	950-ESDD-06101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-06 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/19	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
342	02	950-ESDD-07101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-07 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/20	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
343	02	950-XL-01101	FLAMMABLE GAS ALARM	FZ-01 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/1	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
344	02	950-XL-02101	FLAMMABLE GAS ALARM	FZ-02 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/2	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
345	02	950-XL-03101	FLAMMABLE GAS ALARM	FZ-03 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/3	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
346	02	950-XL-03103	FLAMMABLE GAS ALARM	FZ-03 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/4	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
347	02	950-XL-04101	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/5	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
348	02	950-XL-04103	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/6	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
349	02	950-XL-04201	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACT. - B-400 INDOOR	MEDC	SM87LEDS	225420465/40/7	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
350	02	950-XL-04203	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACT. - B-300 INDOOR	MEDC	SM87LEDS	225420465/40/8	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
351	02	950-XL-04205	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACT. - B-200 INDOOR	MEDC	SM87LEDS	225420465/40/9	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
352	02	950-XL-06101	FLAMMABLE GAS ALARM	FZ-06 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/10	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
353	02	950-XL-06103	FLAMMABLE GAS ALARM	FZ-06 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/11	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
354	02	950-XL-06201	FLAMMABLE GAS ALARM	FZ-06 GAS BEACON ACT. - B-100 INDOOR	MEDC	SM87LEDS	225420465/40/12	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
355	02	950-XL-07101	FLAMMABLE GAS ALARM	FZ-07 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/13	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
356	02	950-XL-01102	FIRE FLASH BEACON	FZ-01 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/1	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
357	02	950-XL-02102	FIRE FLASH BEACON	FZ-02 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/2	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
358	02	950-XL-03102	FIRE FLASH BEACON	FZ-03 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/3	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
359	02	950-XL-03104	FIRE FLASH BEACON	FZ-03 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/4	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
360	02	950-XL-04102	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/5	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
361	02	950-XL-04104	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/6	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
362	02	950-XL-04202	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACT. - B-400 INDOOR	MEDC	SM87LEDS	225420465/50/7	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
363	02	950-XL-04204	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACT. - B-300 INDOOR	MEDC	SM87LEDS	225420465/50/8	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
364	02	950-XL-04206	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACT. - B-200 INDOOR	MEDC	SM87LEDS	225420465/50/9	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE

1 # SUPPLEMENTRY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa03ATEX0222/6**

4 Equipment or Protective System: **SM87 Beacons**

5 Manufacturer: **Cooper MEDC Limited**

6 Address: **Colliery Road, Pinxton, Nottingham NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. **Baseefa03ATEX0222** to apply to equipment or a protective system designed and constructed in accordance with the specification set out in the Schedule of this certificate which incorporates and supersedes all previous issues of the said certificate.

8 Baseefa, Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 to the Directive.

The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR/09/0082/00**

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

EN60079-0: 2009 **EN60079-1: 2007** **IEC60079-31: 2008**

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 equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This Supplementary EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

⟨Ex⟩ II 2 GD Ex d IIC T* (Ta -55°C to + **°C) Gb Ex tb IIIC T°C (Ta -55°C to + **°C) Db IP66/IP67**

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **07/1065**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa

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Registered in England No. 4305578. Registered address as above.

13 **Schedule**

14 **Certificate Number Baseefa03ATEX222/6**

15 Description of Equipment or Protective System

The Type SM87 Beacons comprise a cylindrical enclosure on a square base and a cover provided with a glass dome to component enclosure Baseefa09ATEX0018U. The base and cover may be manufactured from either aluminium or stainless steel and the cover is secured by screws of grade A4-80 stainless steel. The base is provided with up to four threaded cable entries. The units may be joined together by the manufacturer's supplied coupling up to a maximum of 5 units.

The enclosure contains various internal arrangements to form the following:-

A filament lamp and terminals to form a **Type SM87 LU3** rated up to 240Vac, 10W, 25W or 40W.

A fluorescent lamp, a PCB and terminals to form a **Type SM87 LU1** rated up to 254Vac or 48Vdc, 5W or 10W.

A Xenon Lamp, a PCB and terminals to form a **Type SM87 HXB** rated up to 254Vac or 48Vdc, 11W.

A Xenon electronics unit PCB and terminals to form a **Type SM87 XBT/A** rated up to 254Vac or 48Vdc 11W. This unit is to drive the XTB/B unit described below.

A Xenon Lamp PCB and terminals to form a **Type SM87 XBT/B** powered from the unit above.

Four PCBs containing clusters of LEDs, a driver PCB and terminals to form a **Type SM87 LED** rated up to 48Vdc 4W (white) or 5.6W (blue).

The temperature classification and ambient temperature range for the beacons fitted with the specified lamps are indicated below.

Beacon	Watts	Marked Temperature	Ambient temperature range	Cable Temperature Rise (K)
SM87 LU3	10	T100°C	-55°C to + 70°C	30
		T85°C	-55°C to + 55°C	
		T70°C	-55°C to + 40°C	
	25	T130°C	-55°C to + 55°C	65
		T115°C	-55°C to + 40°C	
	40	T155°C	-55°C to + 55°C	110
		T140°C	-55°C to + 40°C	
SM87 LU1	5	T85°C	-55°C to + 55°C	50
		T70°C	-55°C to + 40°C	
	10	T85°C	-55°C to + 55°C	50
		T70°C	-55°C to + 40°C	
SM87 HXB	11	T95°C	-55°C to + 70°C	60
		T80°C	-55°C to + 55°C	
		T65°C	-55°C to + 40°C	
SM87 XBT/A	11	T70°C	-55°C to + 55°C	40
		T55°C	-55°C to + 40°C	

Beacon	Watts	Marked Temperature	Ambient temperature range	Cable Temperature Rise (K)
SM87 XBT/B	-	T110°C	-55°C to + 85°C	20
		T95°C	-55°C to + 70°C	
		T80°C	-55°C to + 55°C	
		T65°C	-55°C to + 40°C	
SM87 LED White	4	T70°C	-55°C to + 55°C	20
		T55°C	-55°C to + 40°C	
SM87 LED Blue	5.6	T70°C	-55°C to + 55°C	20
		T55°C	-55°C to + 40°C	

16 Report Number

Baseefa Certification Report GB/BAS/ExTR09.0082/00

17 Special Conditions for Safe Use

None.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

The drawings indicated below amalgamate the current design and previous variations, and supersede all previous issues.

Number	Sheet	Issue	Date	Description
562-749	1	A	11.08.10	XHB, XBT, LU1, LU3, LED Assemblies
562-749	2	A	11.08.10	XHB, XBT, LU1, LU3, LED Assemblies
562-749	3	A	11.08.10	XHB, XBT, LU1, LU3, LED Assemblies

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/7**
4	Equipment or Protective System:	**SM87 Beacons**
5	Manufacturer:	**Cooper MEDC Limited**
6	Address:	**Unit B, Sutton Parkway, Oddicroft Lane, Sutton-in-Ashfield, NG17 5FB**

7 This supplementary certificate extends EC – Type Examination Certificate No. **Baseefa03ATEX0222** to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0676**

Project File No. **15/0438**

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GENERAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa03ATEX0222/7**

15 Description of the variation to the Equipment or Protective System

Variation 7.1

To permit an alternative type MBK 2.5 terminal, and minor drawings amendments.

Variation 7.2

To permit an increase in power of the blue and white LED versions to 7.2W.

The complete listing is indicated below.

Beacon	Watts	Marked Temperature	Ambient temperature range	Cable Temperature Rise (K)
SM87 LU3	10	T100°C	-55°C to + 70°C	30
		T85°C	-55°C to + 55°C	
		T70°C	-55°C to + 40°C	
	25	T130°C	-55°C to + 55°C	65
		T115°C	-55°C to + 40°C	
	40	T155°C	-55°C to + 55°C	110
		T140°C	-55°C to + 40°C	
SM87 LU1	5	T85°C	-55°C to + 55°C	50
		T70°C	-55°C to + 40°C	
	10	T85°C	-55°C to + 55°C	50
		T70°C	-55°C to + 40°C	
SM87 HXB	11	T95°C	-55°C to + 70°C	60
		T80°C	-55°C to + 55°C	
		T65°C	-55°C to + 40°C	
SM87 XBT/A	11	T70°C	-55°C to + 55°C	40
		T55°C	-55°C to + 40°C	
SM87 XBT/B	-	T110°C	-55°C to + 85°C	20
		T95°C	-55°C to + 70°C	
		T80°C	-55°C to + 55°C	
		T65°C	-55°C to + 40°C	
SM87 LED Red/green/amber	4	T70°C	-55°C to + 55°C	20
		T55°C	-55°C to + 40°C	
SM87 LED White/Blue	7.2	T70°C	-55°C to + 55°C	20
		T55°C	-55°C to + 40°C	

16 Report Number

GB/BAS/ExTR15.0176/00.

17 Specific Conditions of Use

None.

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
562-749	1-3 inc.	B	03.06.15	General Assembly SM87 – ATEX Certification

1 # EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	EC - Type Examination Certificate Number:	**Baseefa03ATEX0222**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**MEDC LIMITED**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa (2001) Ltd. Notified body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 to the Directive.

The examination and test results are recorded in confidential Report No. **03(C)0265**

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

EN 50014: 1997 + Amendments 1 & 2 **EN 50018: 2000 + Amendment 1** **EN 50281-1-1: 1998**

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 equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

⟨Ex⟩ II 2 GD EEx d IIC T* (see schedule)

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa (2001) Ltd. Customer Reference No. **0676**

Project File No. **03/0265**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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R S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.

13 **Schedule**

14 **Certificate Number Baseefa03ATEX0222**

15 Description of Equipment or Protective System

The Type SM87 Beacons each comprise a cylindrical enclosure on a square base with a domed glass cover secured by 4 off M6 x 12mm long socket head cap screws of grade A4-80 stainless steel. The base and cover ring may be manufactured from either aluminium or stainless steel.

The interior of the units may contain one of the following lamp types and the associated control gear, each with different designations and thermal characteristics as shown below :-

TYPE SM87 ---	Lamp Type	Voltage (V)	Watts (W)	Temperature Classification T* (T_{amb}= -55°C to + °C)			
				+40°C	+55°C	+70°C	+85°C
LU3	Filament	240 ac	48	T135°C	T200°C	N/A	
LU1	Fluorescent	254 ac	10	T100°C	T135°C	N/A	
		240 ac		T85°C	T100°C		
		110/120 ac	5				
		12, 24, 48 dc			T85°C		
HXB	Xenon	110, 240, 254 ac	11	T85°C	T135°C	T135°C	N/A
		12, 24, 30, 48 dc					
XBT/A	Xenon (Electronics unit)	110, 240, 254 ac	11*	T85°C	T135°C	N/A	
		12, 24, 30, 48 dc					
XBT/B	Xenon (Lamp unit)	N/A		N/A			T135°C
LED	LED	24, 48 dc	4	T85°C	T135°C	N/A	
	LED (Blue)		5.6				

* Note XBT units A & B are intended to be used together in pairs and are rated accordingly

The enclosure is provided with internal and external earth connection facilities.

Up to 4 cable entry holes threaded M20 to M25 (or NPT & Pg equivalents) are provided for the accommodation of suitable BASEEFA certified flameproof IIC cable entry devices, with or without the interposition of a suitable BASEEFA certified flameproof IIC thread adapter. Unused entries are to be fitted with suitable BASEEFA certified flameproof IIC stopping plugs.

Suitable flameproof IIC cable entry devices, thread adapters and stopping plugs certified as Equipment (not a Component) under an EC Type Examination Certificate to Directive 94/9/EC may also be used in the manner specified above.

If the unit is intended for use in a dust atmosphere these devices must be sealed in accordance with the relevant codes of practice to ensure a dust tight seal.

In addition, these units may be supplied by the manufacturer in an assembly of up to five interconnected enclosures.

16 Report Number

Baseefa Certification Report No. 03(C)0265

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Issue	Date	Description
562-131 Sheets 1 to 3	A	26-03-03	General Arrangement, SM87 Beacons
562-130	A	28-02-03	Enclosure, Earth & Seal Detail
562-128	A	25-03-03	Cover, Machining Detail, Stainless Steel
562-129	A	25-03-03	Enclosure & Cover Detail, Aluminium
562-127	A	25-03-03	Enclosure, Machining Detail, Stainless Steel
562-132	A	26-03-03	Circuit Diagram, SM87 HXB 240V, High Power
562-133	A	26-03-03	Circuit Diagram, SM87 HXB 240V
562-134	A	23-03-03	Circuit Diagram, SM87 HXB 110/120V
562-135	A	27-03-03	Circuit Diagram, SM87 HXB 254V
562-136	A	27-03-03	Circuit Diagram, SM87 HXB 24V
562-137	A	26-03-03	Circuit Diagram, SM87 HXB 48V
562-138	A	26-03-03	Circuit Diagram, Relay/Telephone Interface
562-139	A	26-03-03	Circuit Diagram, SM87 Fluorescent 12, 24 & 48V
562-140	A	26-03-03	Circuit Diagram, SM87 LED 24V
562-141	A	26-03-03	Circuit Diagram, SM87 LED 48V
562-142	A	26-03-03	Circuit Diagram, SM87 LED (Blue) 24 & 48V
562-143	A	26-03-03	Circuit Diagram, SM87 HXB 12V
562-144	A	26-03-03	Circuit Diagram, SM87 HXB 30V

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/1**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**MEDC Limited**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa03ATEX0222 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **05/0662**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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DIRECTOR
On behalf of
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13 # Schedule

14 ## Certificate Number Baseefa03ATEX0222/1

15 Description of the variation to the Equipment or Protective System

Variation 1.1

Increased dimensional tolerance for the wellglass cover.

16 Report Number

None

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Issue	Date	Description
562-131 Sheets 1 to 3	B	06-10-05	General Arrangement, SM87 Beacons

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/2**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**MEDC**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa03ATEX0222 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **07/0040**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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13 # Schedule

14 ## Certificate Number Baseefa03ATEX0222/2

15 Description of the variation to the Equipment or Protective System

Variation 2.1

Increase in the maximum dissipated wattage of the LUI fluorescent fitting rated at 110V to 120V from 5W to 10W

16 Report Number

None

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Issue	Date	Description
562-131 Sheets 1 to 3	C	11-01-07	General Arrangement, SM87 Beacons
562-573	A	11-01-07	AC Fluorescent Ballast Circuit Diagram

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/3**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**MEDC**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa03ATEX0222 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **07/0351**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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13 # Schedule

14 ## Certificate Number Baseefa03ATEX0222/3

15 Description of the variation to the Equipment or Protective System

Variation 3.1

Increase in the depth of label fixing holes.

16 Report Number

None

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Issue	Date	Description
562-129	B	24-04-07	Enclosure/Cover Details

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**See Schedule**
4	Equipment or protective system:	**See Schedule**
5	Manufacturer:	**MEDC Limited**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends the EC - Type Examination Certificates listed in the Schedule to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedules of the said Certificates but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

A copy of this Supplementary Certificate shall be attached to each of the original Certificates.

This certificate may only be reproduced in its entirety, without any change, Schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **08/0067**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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Schedule

Description of the variation to the Equipment or Protective System

Alternative certification label wording for the units listed below and as on the scheduled drawings.

Certificate No.	Supplement No.	Equipment Type
BAS00ATEX2031	3	Type XB9 Xenon Beacon
BAS00ATEX2097X	10	Type DB3 Sounder and DB4 Speaker Units
BAS00ATEX2204X	2	Type XB10 Beacon
Baseefa02ATEX0224X	6	Type XB4 Xenon Beacon
BAS02ATEX2086X	6	Type DB10 Loudspeaker Units
Baseefa03ATEX0222	4	Type SM87 HXB & SM87 LED Beacons
Baseefa04ATEX0166X	3	Type DB16 IIB Speaker Unit

Report No.

None

Special Conditions for Safe Use

None additional to those listed previously

Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

Drawings and Documents

Number	Sheet	Issue	Date	Description
227-173	-	A	28-01-08	Type XB9 Xenon Beacon
219-833	-	A	28-01-08	Type DB3 Sounder Units
199-519	-	A	28-01-08	Type DB4 Speaker Units
228-210	-	A	28-01-08	Type XB10 Beacon
188-625	-	A	28-01-08	Type XB4 Xenon Beacon
253-154	-	A	07-01-08	Type DB10 Loudspeaker Units
562-661	-	A	28-01-08	Type SM87 HXB Xenon Beacon
562-662	-	A	28-01-08	Type SM87 LED Beacon
286-145	-	A	07/01/08	Type DB16 IIB Speaker Unit

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/5**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**Cooper MEDC Limited**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. **Baseefa03ATEX0222** to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **10/0595**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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13 **Schedule**

14 **Certificate Number Baseefa03ATEX0222/5**

15 **Description of the variation to the Equipment or Protective System**

Variation 5.1

To permit clear LEDs in the SM87 LED Beacon.

16 **Report Number**

None.

17 **Special Conditions for Safe Use**

None

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
562-141	1	B	20.07.10	Circuit Diagram, SM87 LED Blue/Clear 24V & 48V

ITEM	Tag	950-XL-03104	: FZ-03 Fire Beacon Activation	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD
TASK	code	C10001555	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.**		225420465/50/04			
Manufacturer	Eaton MEDC			**Model**		SM87LEDS			
Cert No.	Baseefa 03 ATEX 0222			**Equipment Ambient Temp.**		-55°C to +55°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	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	OK	

ITEM	Tag	950-XL-03104	: FZ-03 Fire Beacon Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001555		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	OK	
32	Special conditions (if applicable) have been complied with.	x	NA	
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	PL	
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	OK	
	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	950-XL-03104	: FZ-03 Fire Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001555	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:**

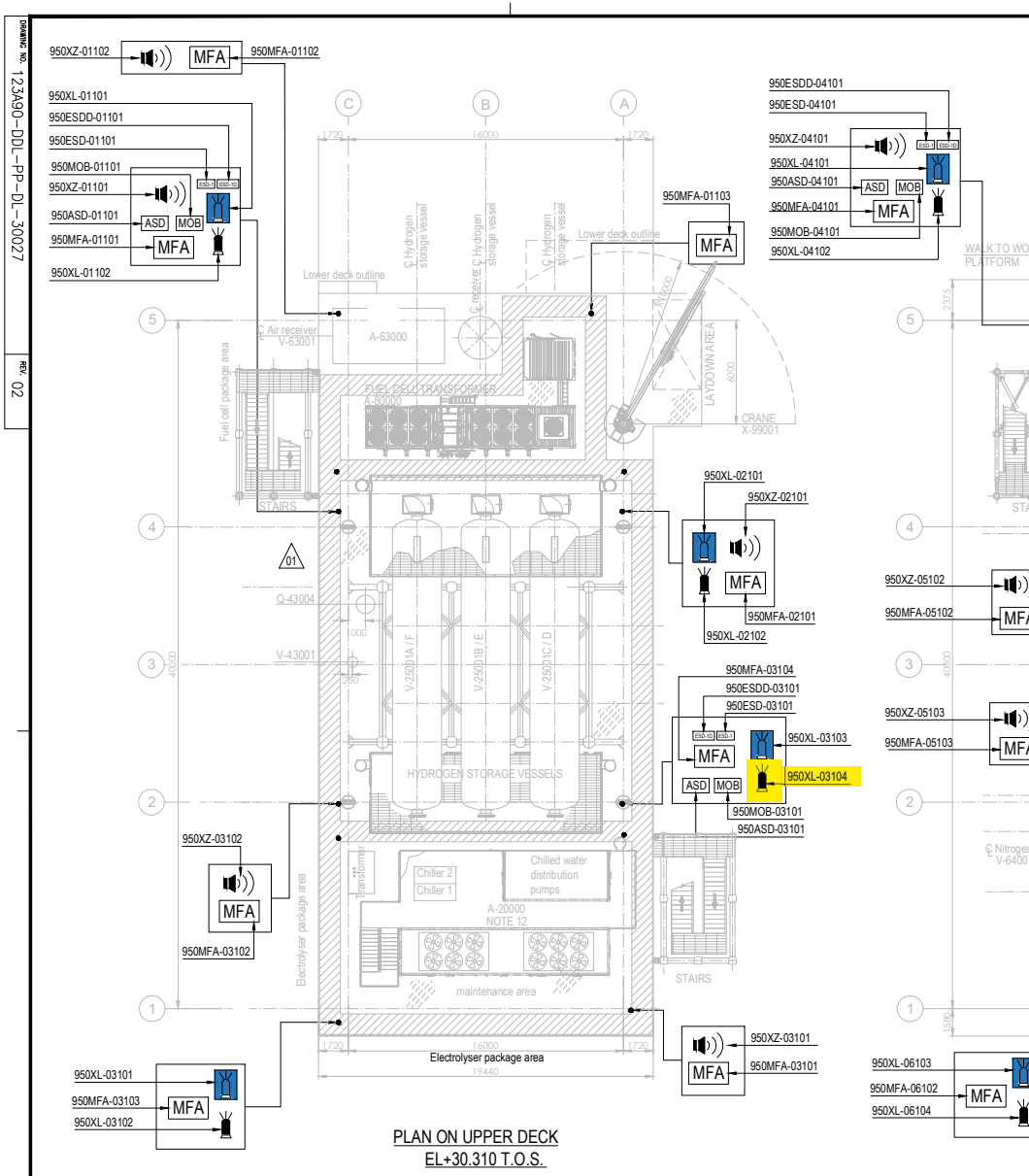
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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	Francesco Zucca	Alessio Polo	
Date	2024-12-11	2024-12-16	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-11T15:24:39.100Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-16T16:20:18.308Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



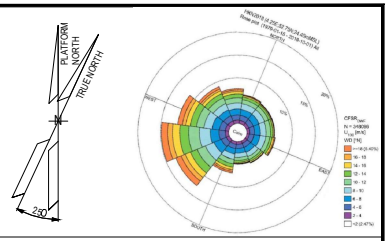
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.
6. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_C	03/12/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

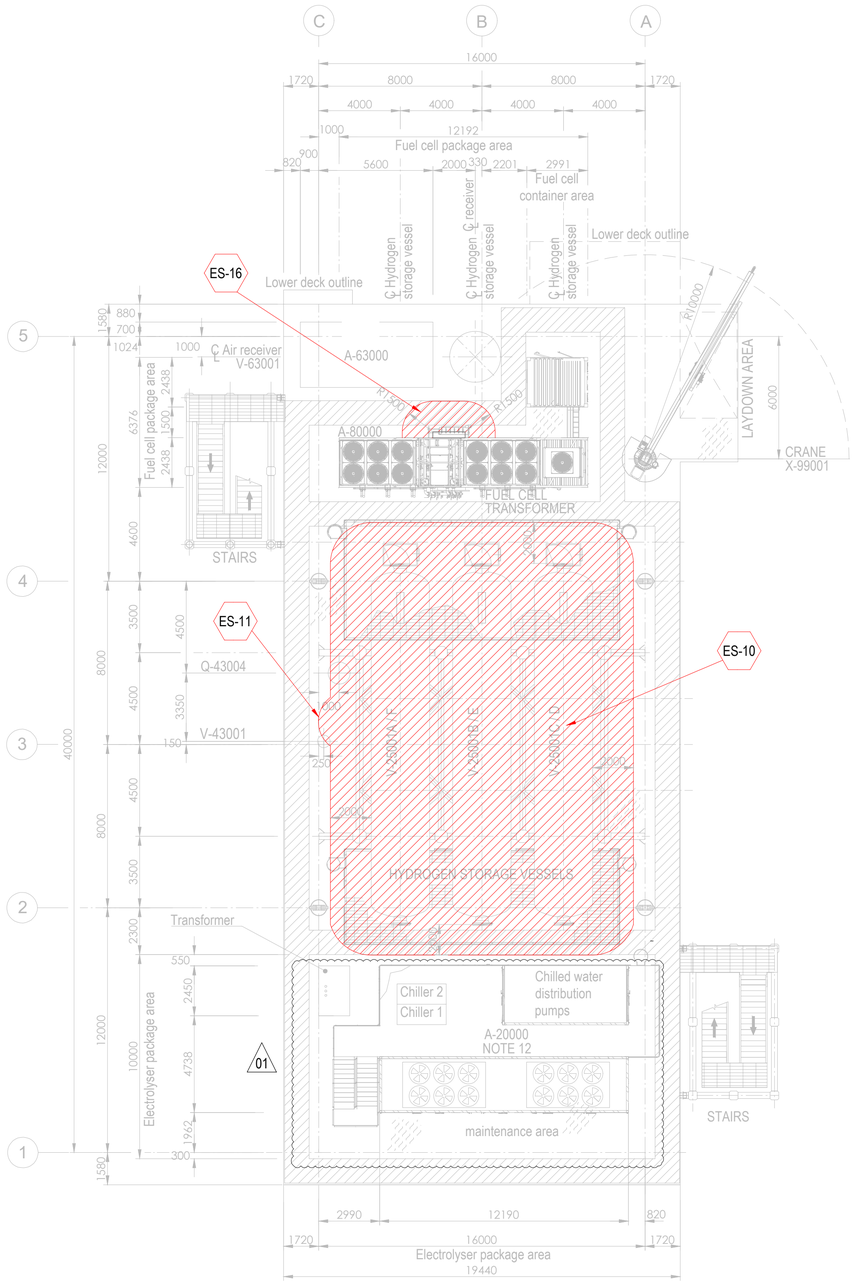
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

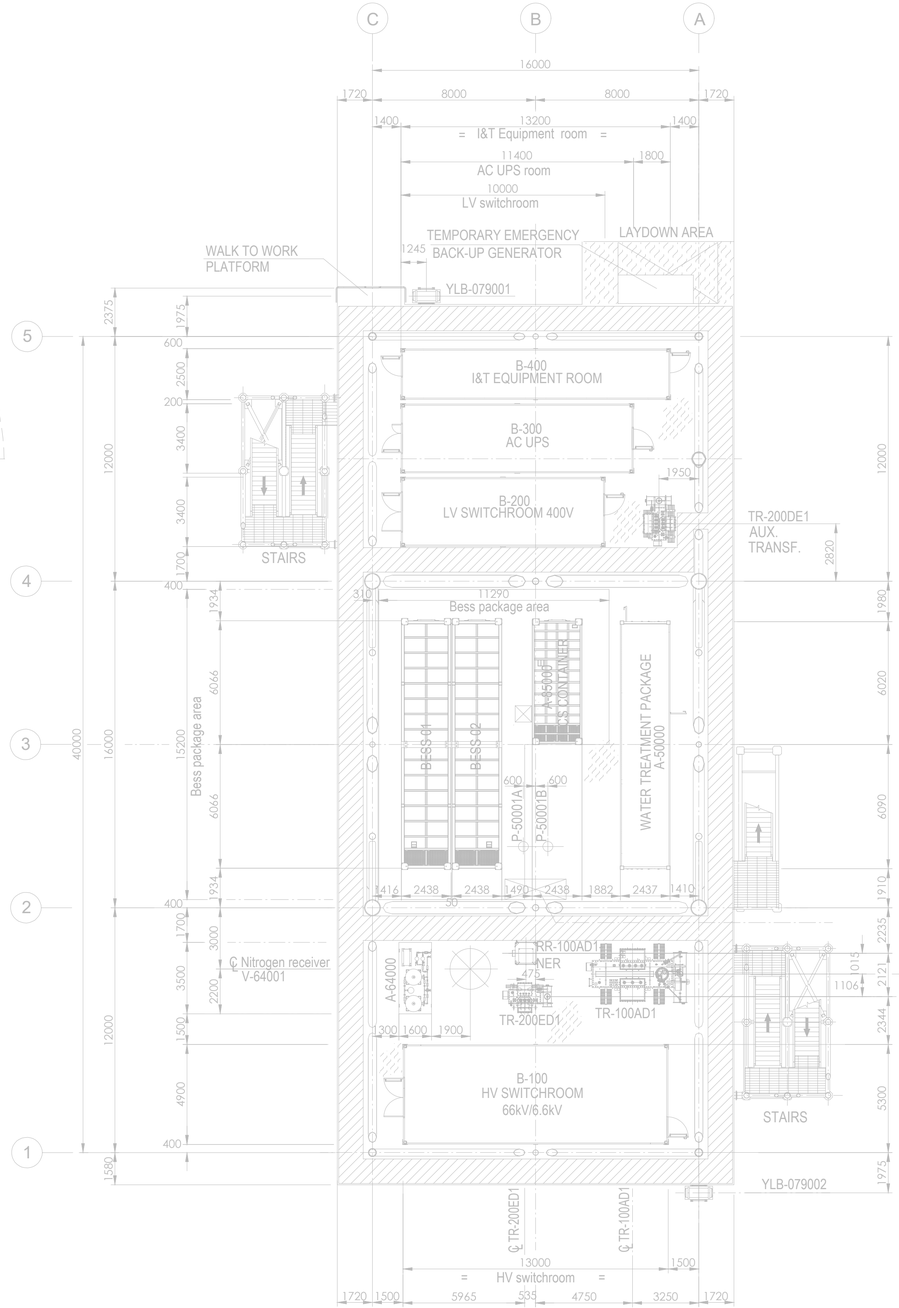
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 01



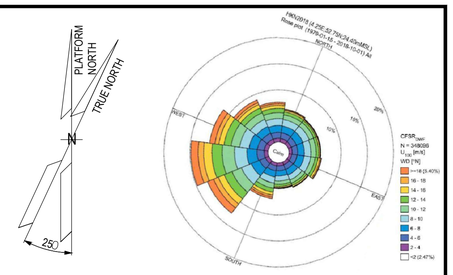
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

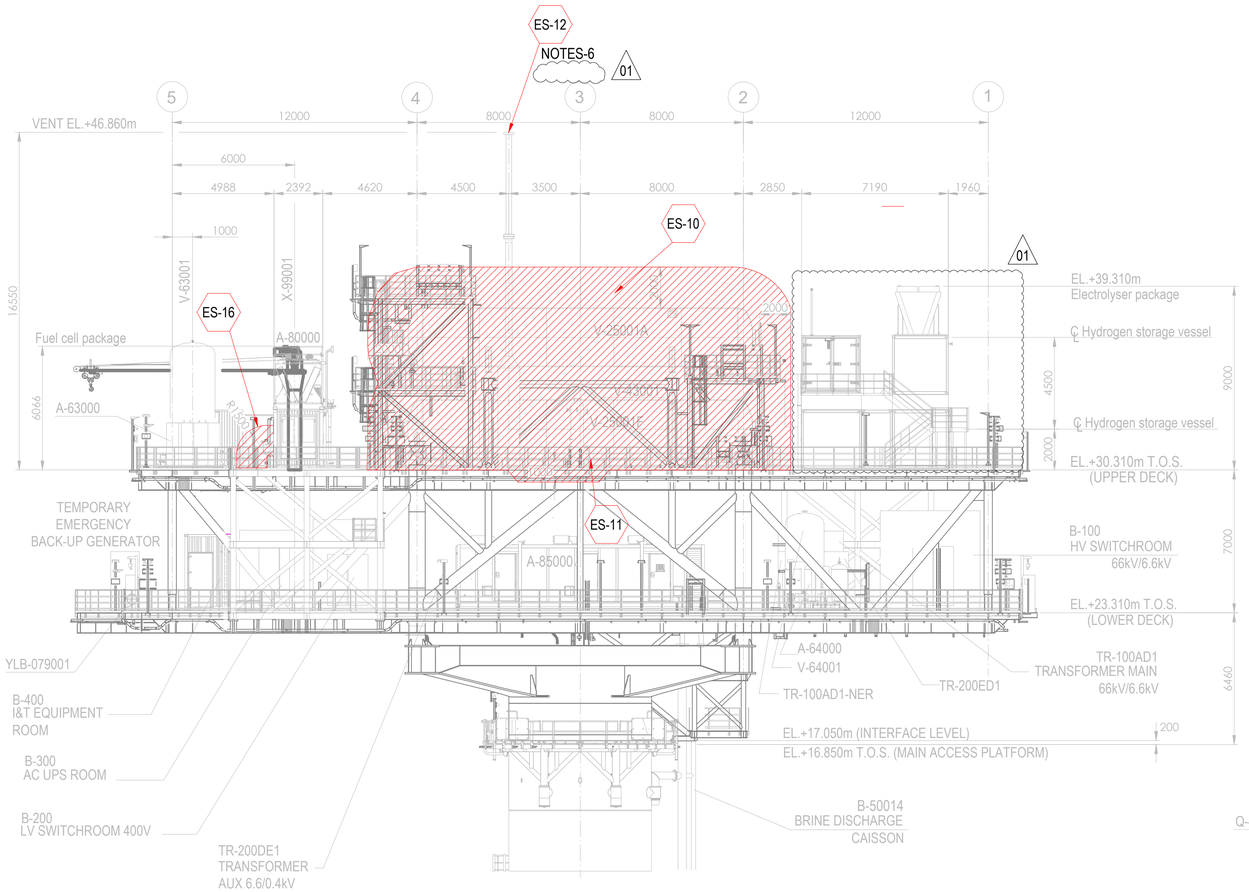
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

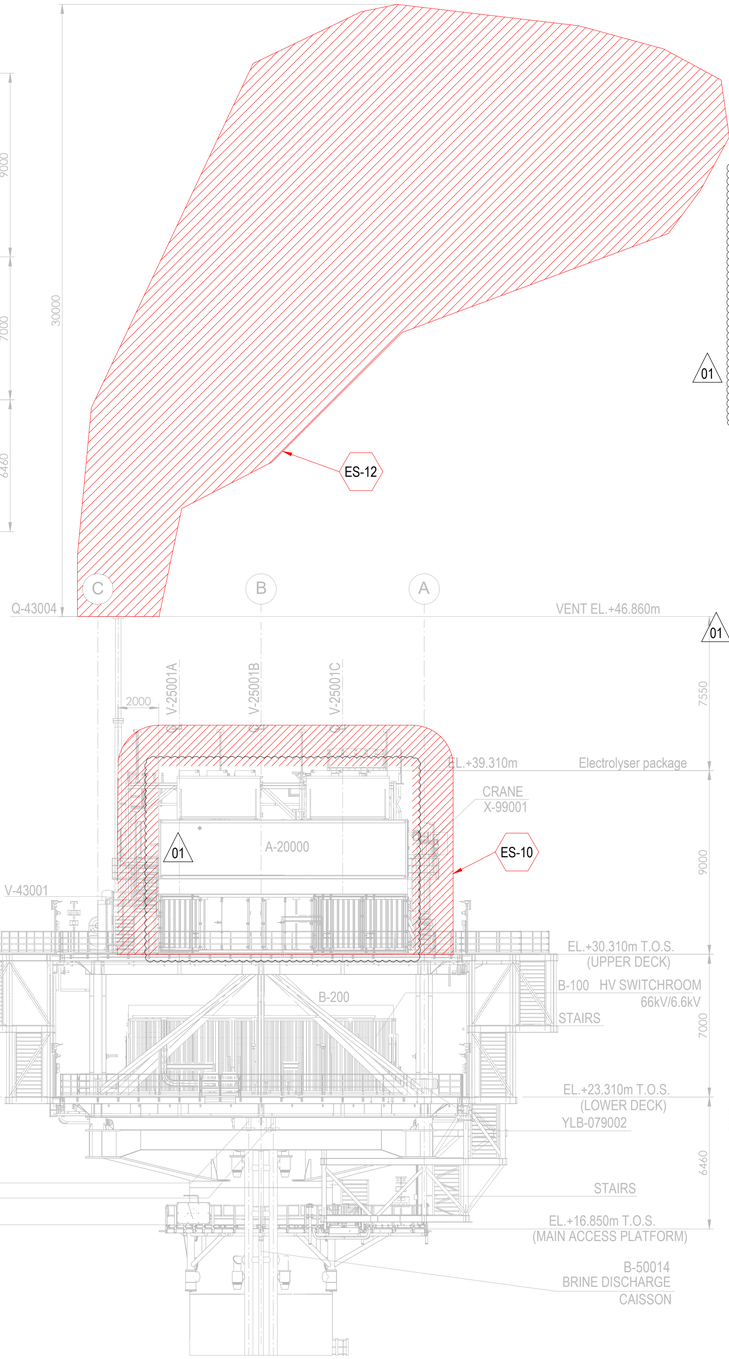
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



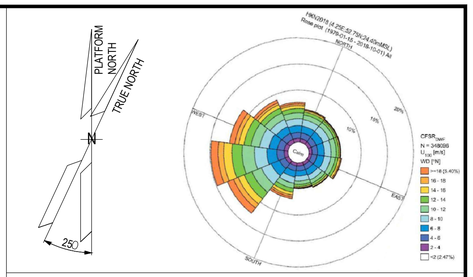
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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

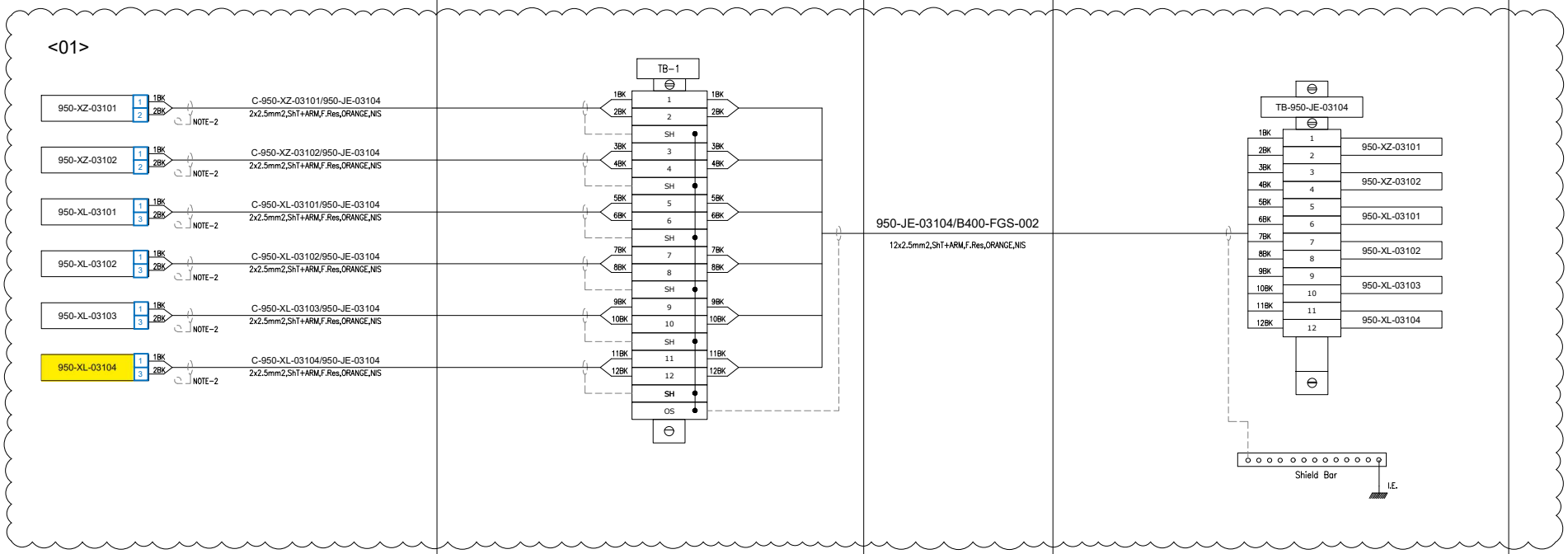
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File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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

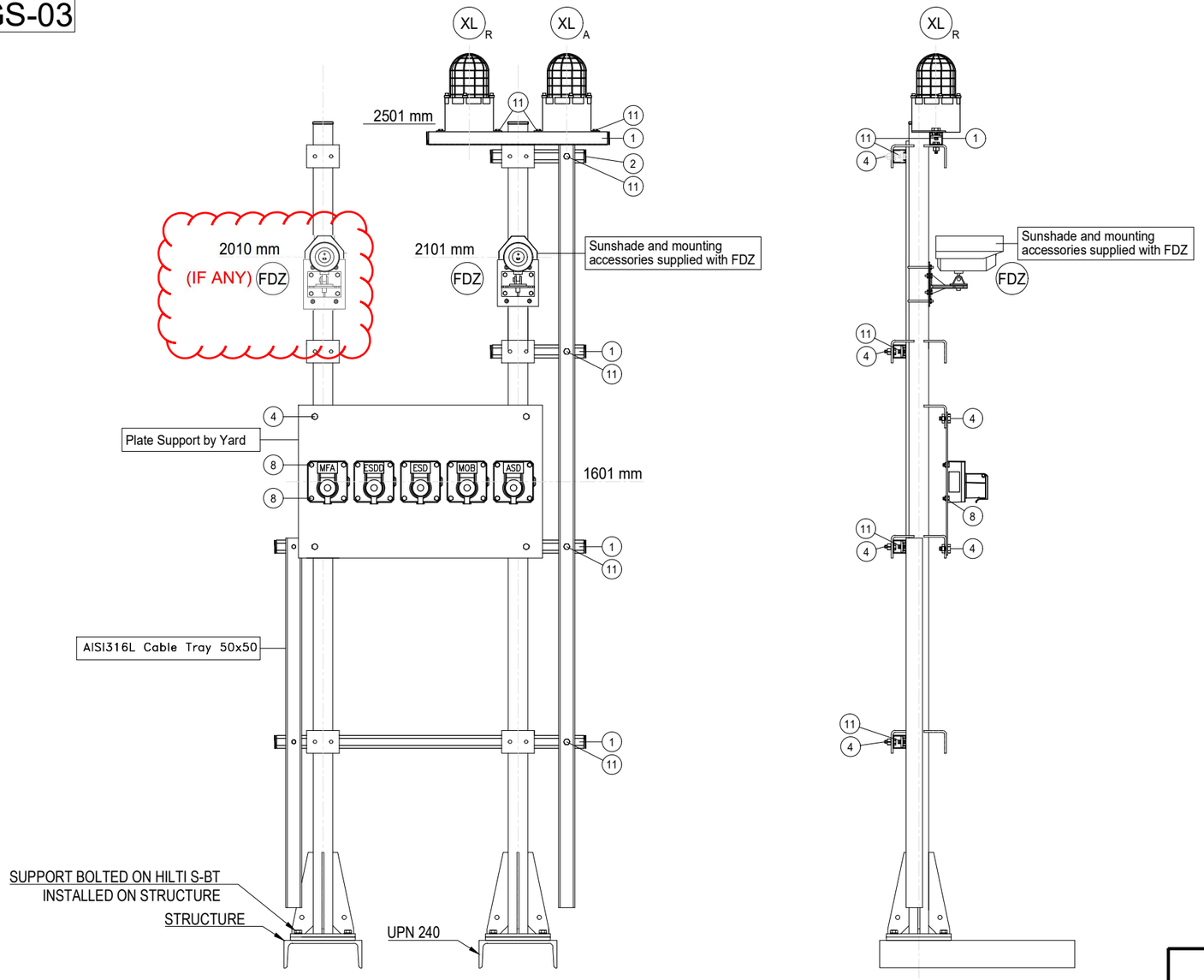
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 066	REV. 01

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

FGS-03

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	6m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	18
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	20
11	AISI 316L SPRING NUT M8 FOR U-CHANNEL 41X41 + BOLT M8x35 + WASHER M8	10

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03103
	XL_R	BEACON - RED	950-XL-03104
	FDZ	FLAME DETECTOR	950-FDZ-03104 & 950-FDZ-02104
	ESDD	MANUAL CALL POINT CONNECTED TO SIS	950-ESDD-03101
	ESD	MANUAL CALL POINT CONNECTED TO SIS	950-ESD-03101
	MOB	MANUAL CALL POINT CONNECTED TO SIS	950-MOB-03101
	ASD	MANUAL CALL POINT CONNECTED TO SIS	950-ASD-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03104

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_E	13/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

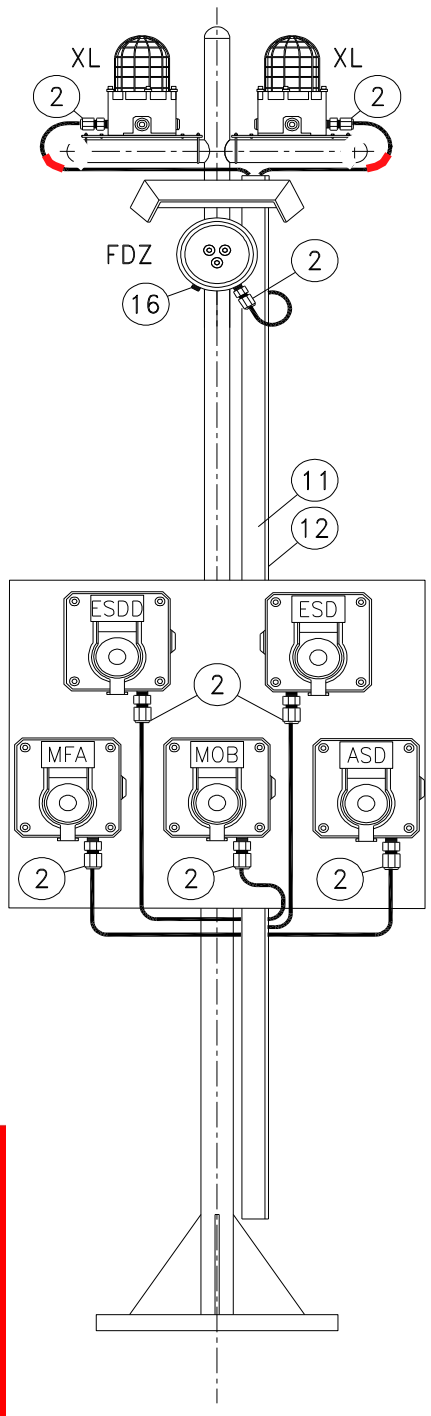
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 022	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-XL-03103 (AMBER)
	950-XL-03104 (RED)
	950-FDZ-063104
	950-ESDD-03101
	950-ESD-03101
	950-MFA-03104
	950-MOB-03101
	950-ASD-03101

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

REV.:	DATE:	SIGNATURE:
2_D	13/11/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	8

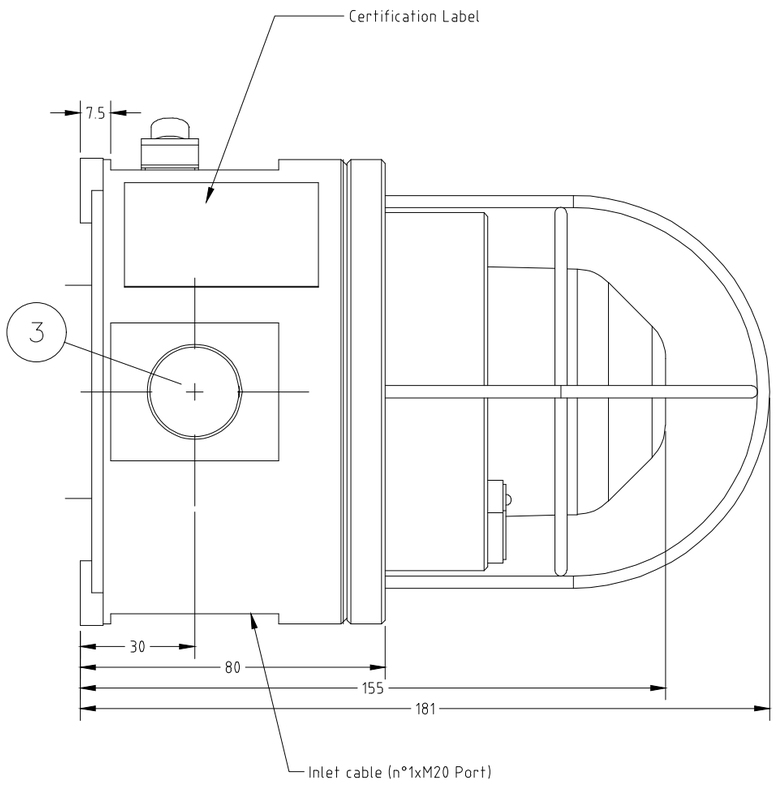
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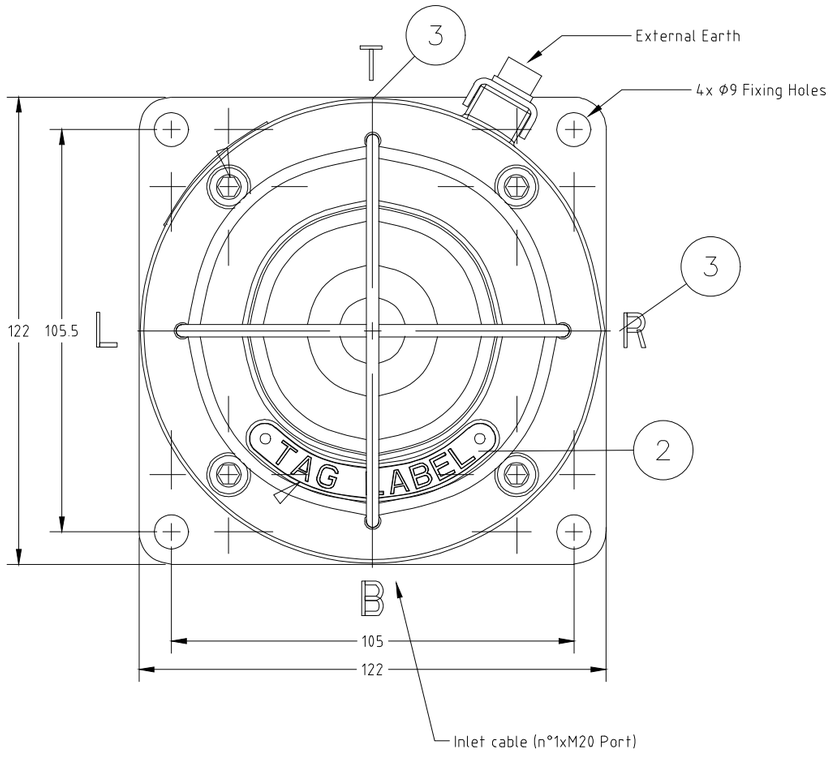
FIRE FLASH BEACON (RED)

ITEM	DESCRIPTIONS	NR
1	Fire Flash Beacon (Red), MEDC SM87LEDSB024RY1B1RYNRZZZ	1
2	Stainless Steel Name Plate	1
3	Stop Plug M20 Ex d AISI 316	2
4		
5		
6		
7		
8		
9		
10		

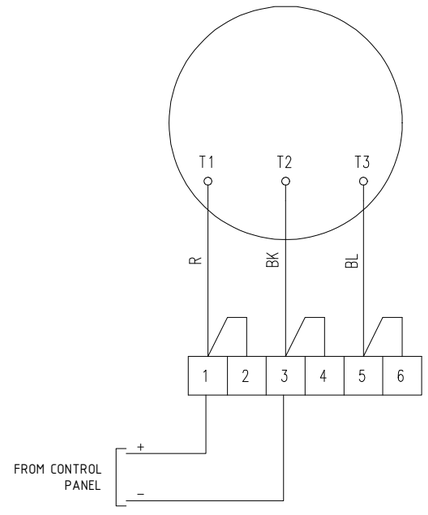
INSTALLATION
QUANTITY

13





WIRING



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FIRE FLASH BEACON (RED)

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FIRE FLASH BEACON (RED) – TAG

POS.	TAG NUMBER
1	950-XL-01102
2	950-XL-02102
3	950-XL-03102
4	950-XL-03104
5	950-XL-04102
6	950-XL-04104
7	950-XL-04202
8	950-XL-04204
9	950-XL-04206
10	950-XL-06102
11	950-XL-06104
12	950-XL-06202
13	950-XL-07102

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FIRE FLASH BEACON (RED) – TAG

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

SCALE : NTS

A3

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FIRE FLASH BEACON (RED)

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-XL-01102	FZ-01 FIRE BEACON ACTIVATION	FIRE ALARM
2	950-XL-02102	FZ-02 FIRE BEACON ACTIVATION	FIRE ALARM
3	950-XL-03102	FZ-03 FIRE BEACON ACTIVATION	FIRE ALARM
4	950-XL-03104	FZ-03 FIRE BEACON ACTIVATION	FIRE ALARM
5	950-XL-04102	FZ-04 FIRE BEACON ACTIVATION	FIRE ALARM
6	950-XL-04104	FZ-04 FIRE BEACON ACTIVATION	FIRE ALARM
7	950-XL-04202	FZ-04 FIRE BEACON ACT. - B-400 INDOOR	FIRE ALARM
8	950-XL-04204	FZ-04 FIRE BEACON ACT. - B-300 INDOOR	FIRE ALARM
9	950-XL-04206	FZ-04 FIRE BEACON ACT. - B-200 INDOOR	FIRE ALARM
10	950-XL-06102	FZ-06 FIRE BEACON ACTIVATION	FIRE ALARM
11	950-XL-06104	FZ-06 FIRE BEACON ACTIVATION	FIRE ALARM
12	950-XL-06202	FZ-06 FIRE BEACON ACT. - B-100 INDOOR	FIRE ALARM
13	950-XL-07102	FZ-07 FIRE BEACON ACTIVATION	FIRE ALARM

File: 1724000821-IN-DS-00004-02.xlsx
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SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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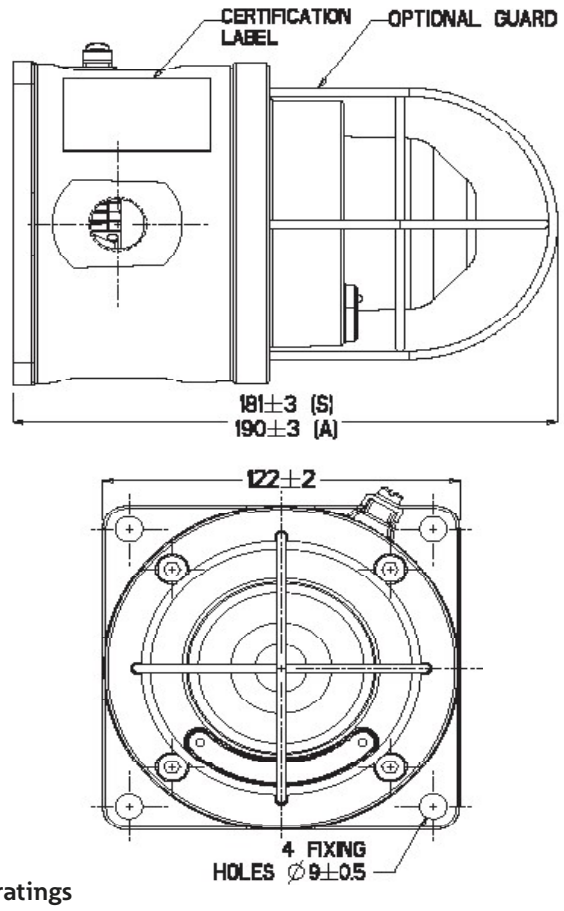
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Ordering requirements

Flash rate: 60fpm

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	R	Y	1B1R	Y	N	R

Model

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Certification

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Voltage

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Lens/LED colour

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Guard

Guard	Code
None	N
Yes	Y

Entries

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Tag/duty

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Options

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

Finish

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

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
337	02	950-ESD-07101	EMERGENCY SHUTDOWN ACTIVATION	FZ-07 ESD-1 PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/15	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
338	02	950-ESDD-01101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-01 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/16	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
339	02	950-ESDD-03101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-03 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/17	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
340	02	950-ESDD-04101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-04 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/18	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
341	02	950-ESDD-06101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-06 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/19	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
342	02	950-ESDD-07101	EMERGENCY SHUTDOWN DEPRESSURIZATION ACTIVATION	FZ-07 ESD-1D PUSH BUTTON ACTIVATION	MEDC	SM87PBL	225420465/30/20	II 2GD Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0075 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
343	02	950-XL-01101	FLAMMABLE GAS ALARM	FZ-01 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/1	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
344	02	950-XL-02101	FLAMMABLE GAS ALARM	FZ-02 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/2	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
345	02	950-XL-03101	FLAMMABLE GAS ALARM	FZ-03 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/3	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
346	02	950-XL-03103	FLAMMABLE GAS ALARM	FZ-03 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/4	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
347	02	950-XL-04101	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/5	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
348	02	950-XL-04103	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/6	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
349	02	950-XL-04201	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACT. - B-400 INDOOR	MEDC	SM87LEDS	225420465/40/7	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
350	02	950-XL-04203	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACT. - B-300 INDOOR	MEDC	SM87LEDS	225420465/40/8	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
351	02	950-XL-04205	FLAMMABLE GAS ALARM	FZ-04 GAS BEACON ACT. - B-200 INDOOR	MEDC	SM87LEDS	225420465/40/9	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
352	02	950-XL-06101	FLAMMABLE GAS ALARM	FZ-06 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/10	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
353	02	950-XL-06103	FLAMMABLE GAS ALARM	FZ-06 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/11	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
354	02	950-XL-06201	FLAMMABLE GAS ALARM	FZ-06 GAS BEACON ACT. - B-100 INDOOR	MEDC	SM87LEDS	225420465/40/12	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
355	02	950-XL-07101	FLAMMABLE GAS ALARM	FZ-07 GAS BEACON ACTIVATION	MEDC	SM87LEDS	225420465/40/13	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
356	02	950-XL-01102	FIRE FLASH BEACON	FZ-01 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/1	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
357	02	950-XL-02102	FIRE FLASH BEACON	FZ-02 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/2	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
358	02	950-XL-03102	FIRE FLASH BEACON	FZ-03 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/3	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
359	02	950-XL-03104	FIRE FLASH BEACON	FZ-03 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/4	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
360	02	950-XL-04102	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/5	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
361	02	950-XL-04104	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/6	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
362	02	950-XL-04202	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACT. - B-400 INDOOR	MEDC	SM87LEDS	225420465/50/7	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
363	02	950-XL-04204	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACT. - B-300 INDOOR	MEDC	SM87LEDS	225420465/50/8	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
364	02	950-XL-04206	FIRE FLASH BEACON	FZ-04 FIRE BEACON ACT. - B-200 INDOOR	MEDC	SM87LEDS	225420465/50/9	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE

1 # SUPPLEMENTRY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa03ATEX0222/6**

4 Equipment or Protective System: **SM87 Beacons**

5 Manufacturer: **Cooper MEDC Limited**

6 Address: **Colliery Road, Pinxton, Nottingham NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. **Baseefa03ATEX0222** to apply to equipment or a protective system designed and constructed in accordance with the specification set out in the Schedule of this certificate which incorporates and supersedes all previous issues of the said certificate.

8 Baseefa, Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 to the Directive.

The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR/09/0082/00**

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

EN60079-0: 2009 **EN60079-1: 2007** **IEC60079-31: 2008**

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 equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This Supplementary EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

⟨Ex⟩ II 2 GD Ex d IIC T* (Ta -55°C to + **°C) Gb Ex tb IIIC T°C (Ta -55°C to + **°C) Db IP66/IP67**

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **07/1065**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa

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Baseefa is a trading name of Baseefa Ltd
Registered in England No. 4305578. Registered address as above.

13 **Schedule**

14 **Certificate Number Baseefa03ATEX222/6**

15 Description of Equipment or Protective System

The Type SM87 Beacons comprise a cylindrical enclosure on a square base and a cover provided with a glass dome to component enclosure Baseefa09ATEX0018U. The base and cover may be manufactured from either aluminium or stainless steel and the cover is secured by screws of grade A4-80 stainless steel. The base is provided with up to four threaded cable entries. The units may be joined together by the manufacturer's supplied coupling up to a maximum of 5 units.

The enclosure contains various internal arrangements to form the following:-

A filament lamp and terminals to form a **Type SM87 LU3** rated up to 240Vac, 10W, 25W or 40W.

A fluorescent lamp, a PCB and terminals to form a **Type SM87 LU1** rated up to 254Vac or 48Vdc, 5W or 10W.

A Xenon Lamp, a PCB and terminals to form a **Type SM87 HXB** rated up to 254Vac or 48Vdc, 11W.

A Xenon electronics unit PCB and terminals to form a **Type SM87 XBT/A** rated up to 254Vac or 48Vdc 11W. This unit is to drive the XTB/B unit described below.

A Xenon Lamp PCB and terminals to form a **Type SM87 XBT/B** powered from the unit above.

Four PCBs containing clusters of LEDs, a driver PCB and terminals to form a **Type SM87 LED** rated up to 48Vdc 4W (white) or 5.6W (blue).

The temperature classification and ambient temperature range for the beacons fitted with the specified lamps are indicated below.

Beacon	Watts	Marked Temperature	Ambient temperature range	Cable Temperature Rise (K)
SM87 LU3	10	T100°C	-55°C to + 70°C	30
		T85°C	-55°C to + 55°C	
		T70°C	-55°C to + 40°C	
	25	T130°C	-55°C to + 55°C	65
		T115°C	-55°C to + 40°C	
	40	T155°C	-55°C to + 55°C	110
		T140°C	-55°C to + 40°C	
SM87 LU1	5	T85°C	-55°C to + 55°C	50
		T70°C	-55°C to + 40°C	
	10	T85°C	-55°C to + 55°C	50
		T70°C	-55°C to + 40°C	
SM87 HXB	11	T95°C	-55°C to + 70°C	60
		T80°C	-55°C to + 55°C	
		T65°C	-55°C to + 40°C	
SM87 XBT/A	11	T70°C	-55°C to + 55°C	40
		T55°C	-55°C to + 40°C	

Beacon	Watts	Marked Temperature	Ambient temperature range	Cable Temperature Rise (K)
SM87 XBT/B	-	T110°C	-55°C to + 85°C	20
		T95°C	-55°C to + 70°C	
		T80°C	-55°C to + 55°C	
		T65°C	-55°C to + 40°C	
SM87 LED White	4	T70°C	-55°C to + 55°C	20
		T55°C	-55°C to + 40°C	
SM87 LED Blue	5.6	T70°C	-55°C to + 55°C	20
		T55°C	-55°C to + 40°C	

16 Report Number

Baseefa Certification Report GB/BAS/ExTR09.0082/00

17 Special Conditions for Safe Use

None.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

The drawings indicated below amalgamate the current design and previous variations, and supersede all previous issues.

Number	Sheet	Issue	Date	Description
562-749	1	A	11.08.10	XHB, XBT, LU1, LU3, LED Assemblies
562-749	2	A	11.08.10	XHB, XBT, LU1, LU3, LED Assemblies
562-749	3	A	11.08.10	XHB, XBT, LU1, LU3, LED Assemblies

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/7**
4	Equipment or Protective System:	**SM87 Beacons**
5	Manufacturer:	**Cooper MEDC Limited**
6	Address:	**Unit B, Sutton Parkway, Oddicroft Lane, Sutton-in-Ashfield, NG17 5FB**

7 This supplementary certificate extends EC – Type Examination Certificate No. **Baseefa03ATEX0222** to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0676**

Project File No. **15/0438**

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pp MDowney MDOWNEY
R S SINCLAIR
GENERAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa03ATEX0222/7**

15 Description of the variation to the Equipment or Protective System

Variation 7.1

To permit an alternative type MBK 2.5 terminal, and minor drawings amendments.

Variation 7.2

To permit an increase in power of the blue and white LED versions to 7.2W.

The complete listing is indicated below.

Beacon	Watts	Marked Temperature	Ambient temperature range	Cable Temperature Rise (K)
SM87 LU3	10	T100°C	-55°C to + 70°C	30
		T85°C	-55°C to + 55°C	
		T70°C	-55°C to + 40°C	
	25	T130°C	-55°C to + 55°C	65
		T115°C	-55°C to + 40°C	
	40	T155°C	-55°C to + 55°C	110
		T140°C	-55°C to + 40°C	
SM87 LU1	5	T85°C	-55°C to + 55°C	50
		T70°C	-55°C to + 40°C	
	10	T85°C	-55°C to + 55°C	50
		T70°C	-55°C to + 40°C	
SM87 HXB	11	T95°C	-55°C to + 70°C	60
		T80°C	-55°C to + 55°C	
		T65°C	-55°C to + 40°C	
SM87 XBT/A	11	T70°C	-55°C to + 55°C	40
		T55°C	-55°C to + 40°C	
SM87 XBT/B	-	T110°C	-55°C to + 85°C	20
		T95°C	-55°C to + 70°C	
		T80°C	-55°C to + 55°C	
		T65°C	-55°C to + 40°C	
SM87 LED Red/green/amber	4	T70°C	-55°C to + 55°C	20
		T55°C	-55°C to + 40°C	
SM87 LED White/Blue	7.2	T70°C	-55°C to + 55°C	20
		T55°C	-55°C to + 40°C	

16 Report Number

GB/BAS/ExTR15.0176/00.

17 Specific Conditions of Use

None.

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
562-749	1-3 inc.	B	03.06.15	General Assembly SM87 – ATEX Certification

1 # EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	EC - Type Examination Certificate Number:	**Baseefa03ATEX0222**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**MEDC LIMITED**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa (2001) Ltd. Notified body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 to the Directive.

The examination and test results are recorded in confidential Report No. **03(C)0265**

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

EN 50014: 1997 + Amendments 1 & 2 **EN 50018: 2000 + Amendment 1** **EN 50281-1-1: 1998**

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 equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

⟨Ex⟩ II 2 GD EEx d IIC T* (see schedule)

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa (2001) Ltd. Customer Reference No. **0676**

Project File No. **03/0265**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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R S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.

13 **Schedule**

14 **Certificate Number Baseefa03ATEX0222**

15 Description of Equipment or Protective System

The Type SM87 Beacons each comprise a cylindrical enclosure on a square base with a domed glass cover secured by 4 off M6 x 12mm long socket head cap screws of grade A4-80 stainless steel. The base and cover ring may be manufactured from either aluminium or stainless steel.

The interior of the units may contain one of the following lamp types and the associated control gear, each with different designations and thermal characteristics as shown below :-

TYPE SM87 ---	Lamp Type	Voltage (V)	Watts (W)	Temperature Classification T* (T_{amb}= -55°C to + °C)			
				+40°C	+55°C	+70°C	+85°C
LU3	Filament	240 ac	48	T135°C	T200°C	N/A	
LU1	Fluorescent	254 ac	10	T100°C	T135°C	N/A	
		240 ac		T85°C	T100°C		
		110/120 ac	5				
		12, 24, 48 dc			T85°C		
HXB	Xenon	110, 240, 254 ac	11	T85°C	T135°C	T135°C	N/A
		12, 24, 30, 48 dc					
XBT/A	Xenon (Electronics unit)	110, 240, 254 ac	11*	T85°C	T135°C	N/A	
		12, 24, 30, 48 dc					
XBT/B	Xenon (Lamp unit)	N/A		N/A			T135°C
LED	LED	24, 48 dc	4	T85°C	T135°C	N/A	
	LED (Blue)		5.6				

* Note XBT units A & B are intended to be used together in pairs and are rated accordingly

The enclosure is provided with internal and external earth connection facilities.

Up to 4 cable entry holes threaded M20 to M25 (or NPT & Pg equivalents) are provided for the accommodation of suitable BASEEFA certified flameproof IIC cable entry devices, with or without the interposition of a suitable BASEEFA certified flameproof IIC thread adapter. Unused entries are to be fitted with suitable BASEEFA certified flameproof IIC stopping plugs.

Suitable flameproof IIC cable entry devices, thread adapters and stopping plugs certified as Equipment (not a Component) under an EC Type Examination Certificate to Directive 94/9/EC may also be used in the manner specified above.

If the unit is intended for use in a dust atmosphere these devices must be sealed in accordance with the relevant codes of practice to ensure a dust tight seal.

In addition, these units may be supplied by the manufacturer in an assembly of up to five interconnected enclosures.

16 Report Number

Baseefa Certification Report No. 03(C)0265

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Issue	Date	Description
562-131 Sheets 1 to 3	A	26-03-03	General Arrangement, SM87 Beacons
562-130	A	28-02-03	Enclosure, Earth & Seal Detail
562-128	A	25-03-03	Cover, Machining Detail, Stainless Steel
562-129	A	25-03-03	Enclosure & Cover Detail, Aluminium
562-127	A	25-03-03	Enclosure, Machining Detail, Stainless Steel
562-132	A	26-03-03	Circuit Diagram, SM87 HXB 240V, High Power
562-133	A	26-03-03	Circuit Diagram, SM87 HXB 240V
562-134	A	23-03-03	Circuit Diagram, SM87 HXB 110/120V
562-135	A	27-03-03	Circuit Diagram, SM87 HXB 254V
562-136	A	27-03-03	Circuit Diagram, SM87 HXB 24V
562-137	A	26-03-03	Circuit Diagram, SM87 HXB 48V
562-138	A	26-03-03	Circuit Diagram, Relay/Telephone Interface
562-139	A	26-03-03	Circuit Diagram, SM87 Fluorescent 12, 24 & 48V
562-140	A	26-03-03	Circuit Diagram, SM87 LED 24V
562-141	A	26-03-03	Circuit Diagram, SM87 LED 48V
562-142	A	26-03-03	Circuit Diagram, SM87 LED (Blue) 24 & 48V
562-143	A	26-03-03	Circuit Diagram, SM87 HXB 12V
562-144	A	26-03-03	Circuit Diagram, SM87 HXB 30V

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/1**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**MEDC Limited**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa03ATEX0222 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **05/0662**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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DIRECTOR
On behalf of
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13 # Schedule

14 ## Certificate Number Baseefa03ATEX0222/1

15 Description of the variation to the Equipment or Protective System

Variation 1.1

Increased dimensional tolerance for the wellglass cover.

16 Report Number

None

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Issue	Date	Description
562-131 Sheets 1 to 3	B	06-10-05	General Arrangement, SM87 Beacons

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/2**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**MEDC**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa03ATEX0222 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **07/0040**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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13 # Schedule

14 ## Certificate Number Baseefa03ATEX0222/2

15 Description of the variation to the Equipment or Protective System

Variation 2.1

Increase in the maximum dissipated wattage of the LUI fluorescent fitting rated at 110V to 120V from 5W to 10W

16 Report Number

None

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Issue	Date	Description
562-131 Sheets 1 to 3	C	11-01-07	General Arrangement, SM87 Beacons
562-573	A	11-01-07	AC Fluorescent Ballast Circuit Diagram

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/3**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**MEDC**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa03ATEX0222 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **07/0351**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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13 # Schedule

14 ## Certificate Number Baseefa03ATEX0222/3

15 Description of the variation to the Equipment or Protective System

Variation 3.1

Increase in the depth of label fixing holes.

16 Report Number

None

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Issue	Date	Description
562-129	B	24-04-07	Enclosure/Cover Details

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**See Schedule**
4	Equipment or protective system:	**See Schedule**
5	Manufacturer:	**MEDC Limited**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends the EC - Type Examination Certificates listed in the Schedule to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedules of the said Certificates but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

A copy of this Supplementary Certificate shall be attached to each of the original Certificates.

This certificate may only be reproduced in its entirety, without any change, Schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **08/0067**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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Schedule

Description of the variation to the Equipment or Protective System

Alternative certification label wording for the units listed below and as on the scheduled drawings.

Certificate No.	Supplement No.	Equipment Type
BAS00ATEX2031	3	Type XB9 Xenon Beacon
BAS00ATEX2097X	10	Type DB3 Sounder and DB4 Speaker Units
BAS00ATEX2204X	2	Type XB10 Beacon
Baseefa02ATEX0224X	6	Type XB4 Xenon Beacon
BAS02ATEX2086X	6	Type DB10 Loudspeaker Units
Baseefa03ATEX0222	4	Type SM87 HXB & SM87 LED Beacons
Baseefa04ATEX0166X	3	Type DB16 IIB Speaker Unit

Report No.

None

Special Conditions for Safe Use

None additional to those listed previously

Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

Drawings and Documents

Number	Sheet	Issue	Date	Description
227-173	-	A	28-01-08	Type XB9 Xenon Beacon
219-833	-	A	28-01-08	Type DB3 Sounder Units
199-519	-	A	28-01-08	Type DB4 Speaker Units
228-210	-	A	28-01-08	Type XB10 Beacon
188-625	-	A	28-01-08	Type XB4 Xenon Beacon
253-154	-	A	07-01-08	Type DB10 Loudspeaker Units
562-661	-	A	28-01-08	Type SM87 HXB Xenon Beacon
562-662	-	A	28-01-08	Type SM87 LED Beacon
286-145	-	A	07/01/08	Type DB16 IIB Speaker Unit

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa03ATEX0222/5**
4	Equipment or Protective System:	**SM87 BEACONS**
5	Manufacturer:	**Cooper MEDC Limited**
6	Address:	**Colliery Road, Pinxton, Nottingham, NG16 6JF**

7 This supplementary certificate extends EC – Type Examination Certificate No. **Baseefa03ATEX0222** to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0676**

Project File No. **10/0595**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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13 **Schedule**

14 **Certificate Number Baseefa03ATEX0222/5**

15 **Description of the variation to the Equipment or Protective System**

Variation 5.1

To permit clear LEDs in the SM87 LED Beacon.

16 **Report Number**

None.

17 **Special Conditions for Safe Use**

None

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
562-141	1	B	20.07.10	Circuit Diagram, SM87 LED Blue/Clear 24V & 48V

ITEM	Tag	950-XZ-03102	: FZ-03 Sounder Activation	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD
TASK	code	C10001559	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.**		225420465/60/05			
Manufacturer	Eaton MEDC			**Model**		DB3BM			
Cert No.	UL 21 ATEX 2559			**Equipment Ambient Temp.**		-60°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**	T4	**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	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	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	950-XZ-03102	: FZ-03 Sounder Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001559		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	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	PL	
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	OK	
	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	950-XZ-03102	: FZ-03 Sounder Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001559		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:**	

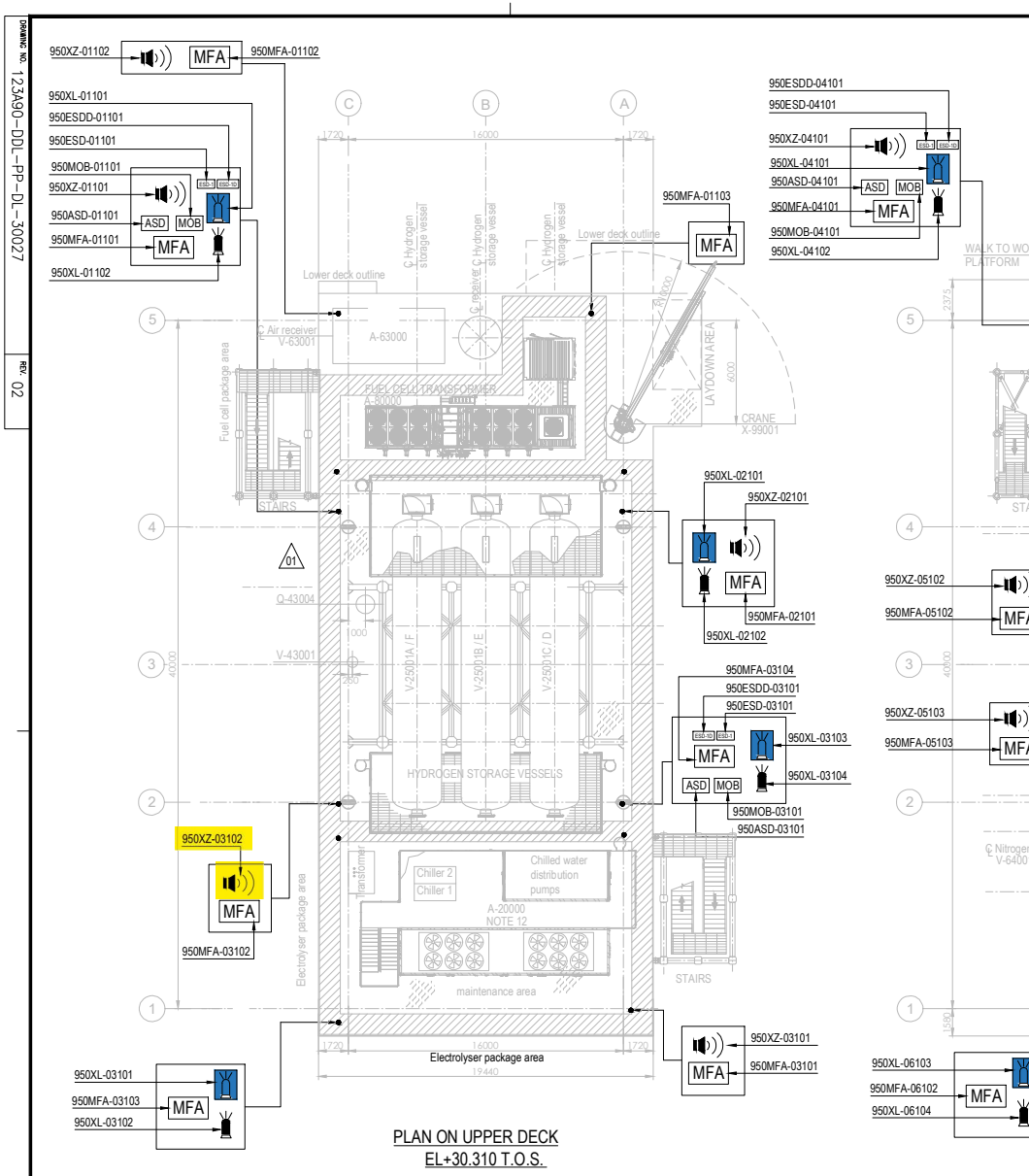
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	ROSETTI MARINO	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-11	2024-12-11	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-11T15:25:16.507Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-11T17:12:05.104Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

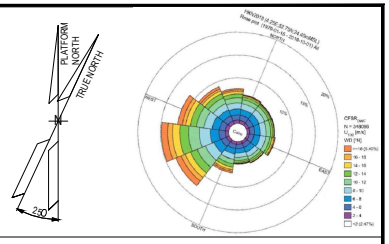
REV. 02



EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.
6. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_C	03/12/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

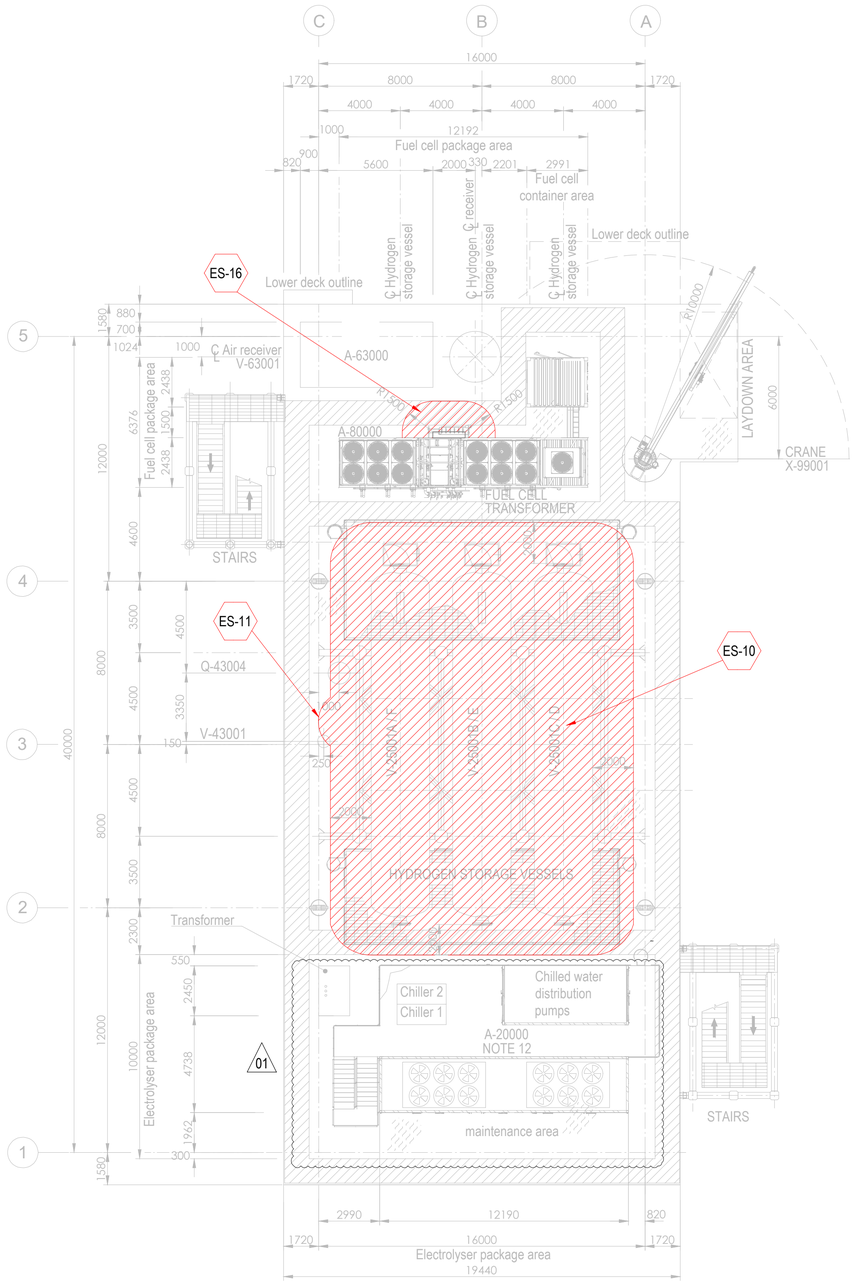
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

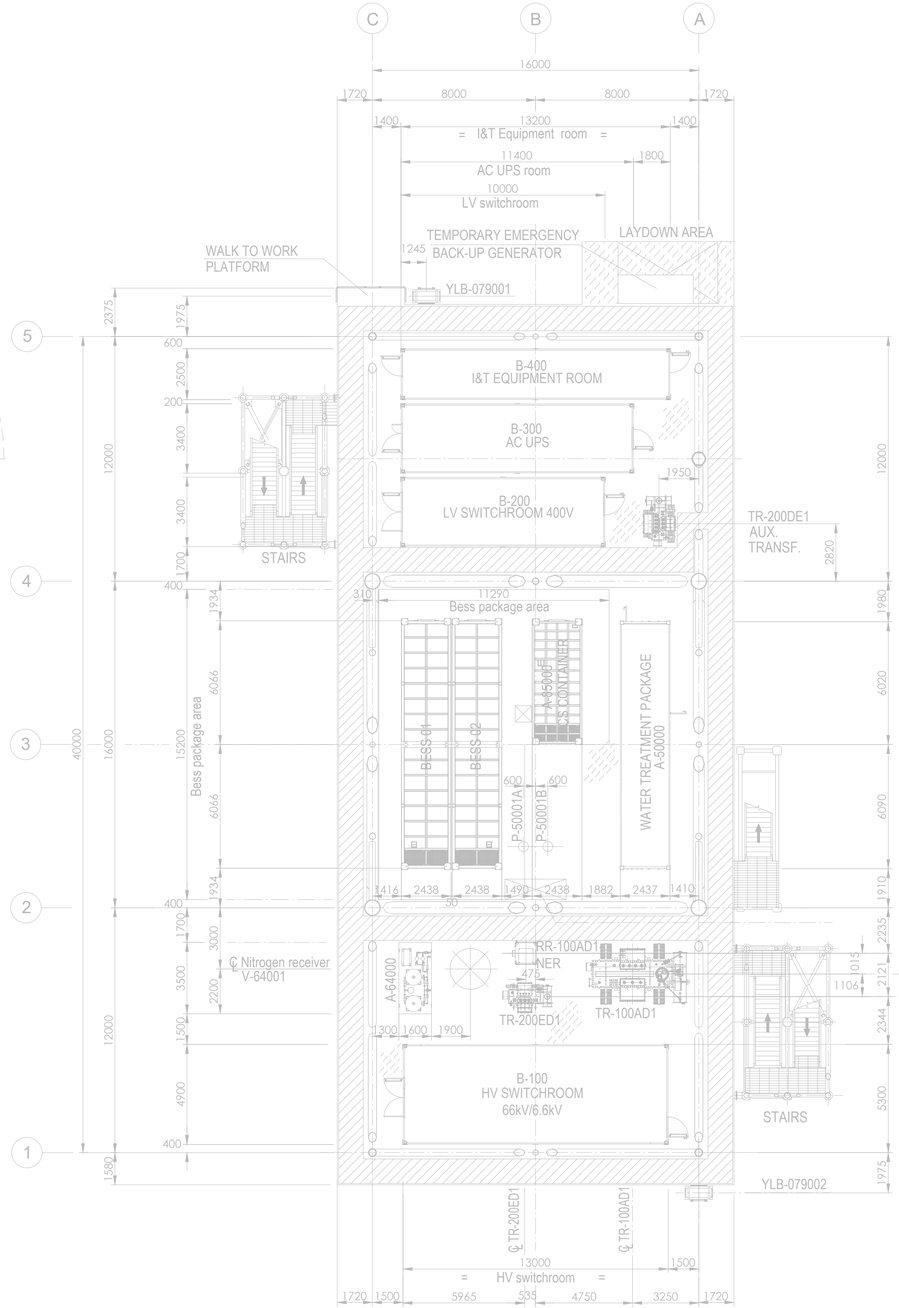
File Name : - 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01



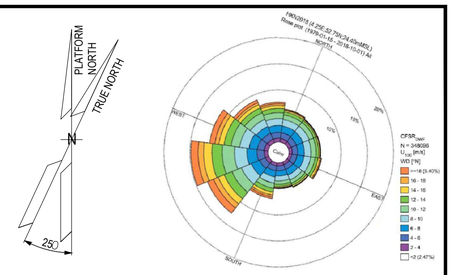
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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		



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

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

01

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

01

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
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

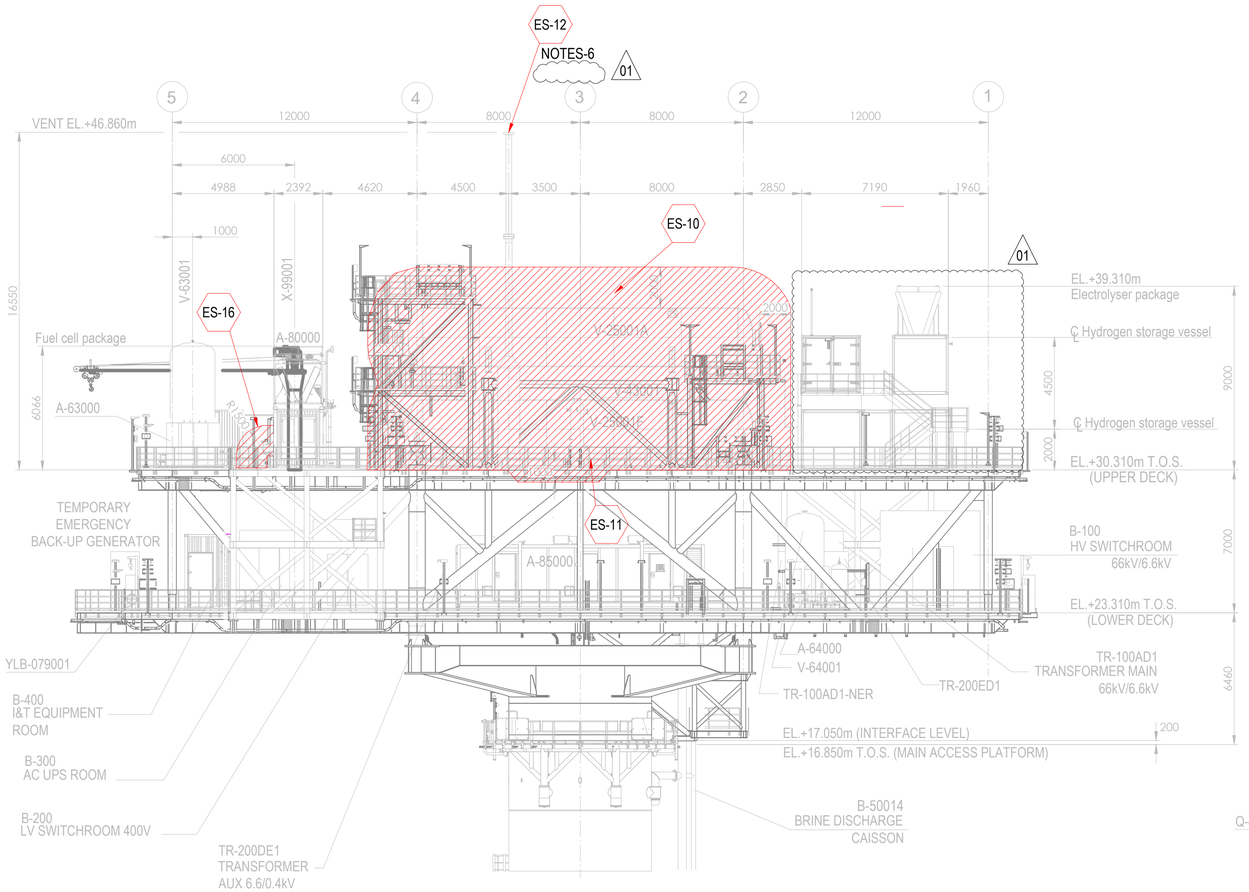
TITLE : BASE LOAD POWER HUB (BLPH)
HAZARDOUS AREA CLASSIFICATION
LOWER & UPPER DECK

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
A1	DRAWING NO. 123A90-DDL-SAF-DL-30022	SHEET 001	REV. 01

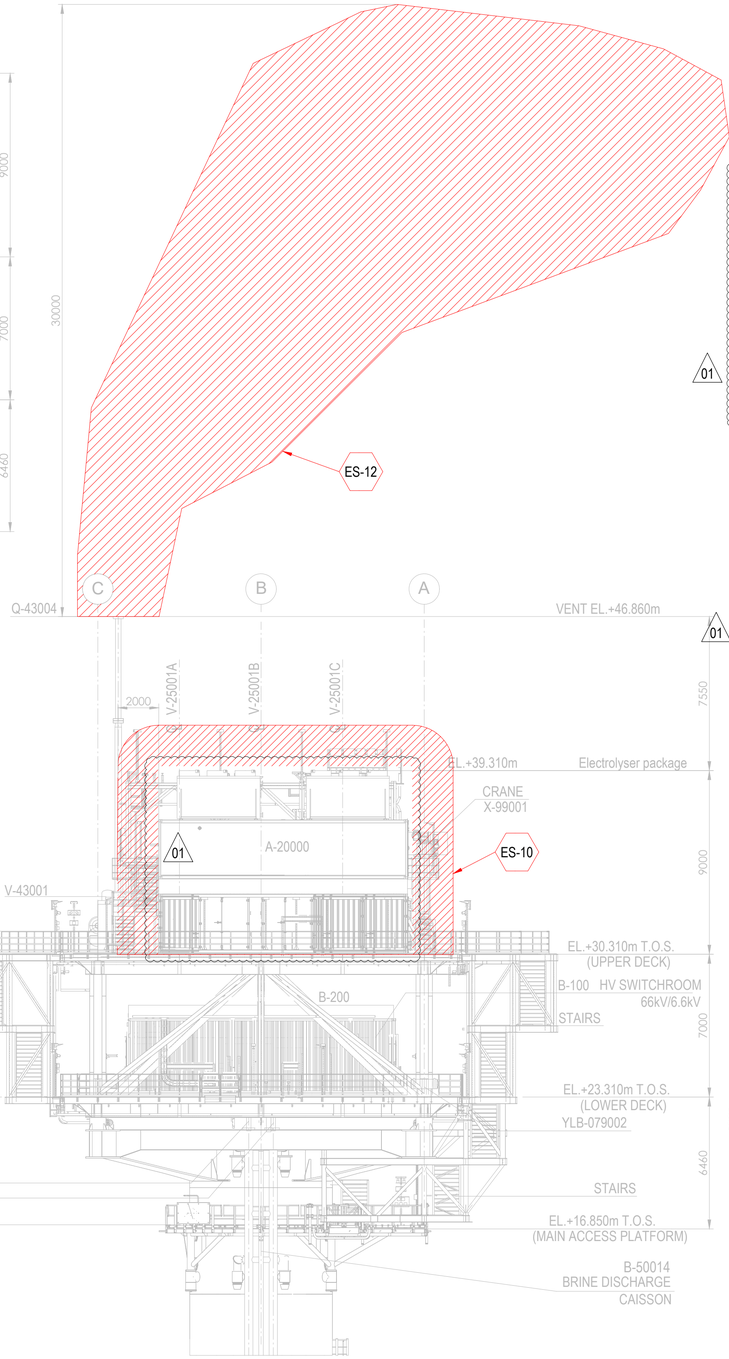
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 01



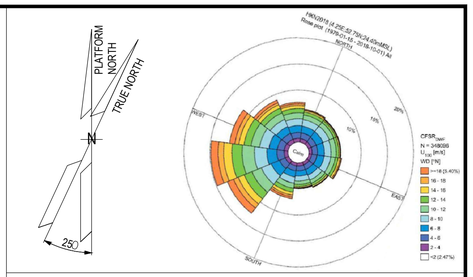
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

01

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. (ES12) IS SHOWN ONLY ON ELEVATION LOOKING NORTH ON THIS LAYOUT
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

01

LEGEND

ZONE 0 | ZONE 1 | ZONE 2 | ES EMISSION SOURCES

01

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
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. 01

File Name : 123A90-DDL-SAF-DL-30024 Rev.01

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>

950-XZ-03101	C-950-XZ-03101/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	TB-1 1BK→1, 2BK→2, SH, 3BK→3, 4BK→4, SH, 5BK→5, 6BK→6, SH, 7BK→7, 8BK→8, SH, 9BK→9, 10BK→10, SH, 11BK→11, 12BK→12, SH, OS	950-JE-03104/B400-FGS-002 12x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS
950-XZ-03102	C-950-XZ-03102/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		
950-XL-03101	C-950-XL-03101/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		
950-XL-03102	C-950-XL-03102/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		
950-XL-03103	C-950-XL-03103/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		
950-XL-03104	C-950-XL-03104/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS		

All instrument connections: 1BK, 2BK; NOTE-2

TB-950-JE-03104: 1BK→1, 2BK→2, 3BK→3, 4BK→4, 5BK→5, 6BK→6, 7BK→7, 8BK→8, 9BK→9, 10BK→10, 11BK→11, 12BK→12

1→950-XZ-03101; 2→950-XZ-03102; 3→950-XL-03101; 4→950-XL-03102; 5→950-XL-03103; 6→950-XL-03104

Shield Bar — I.E.

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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

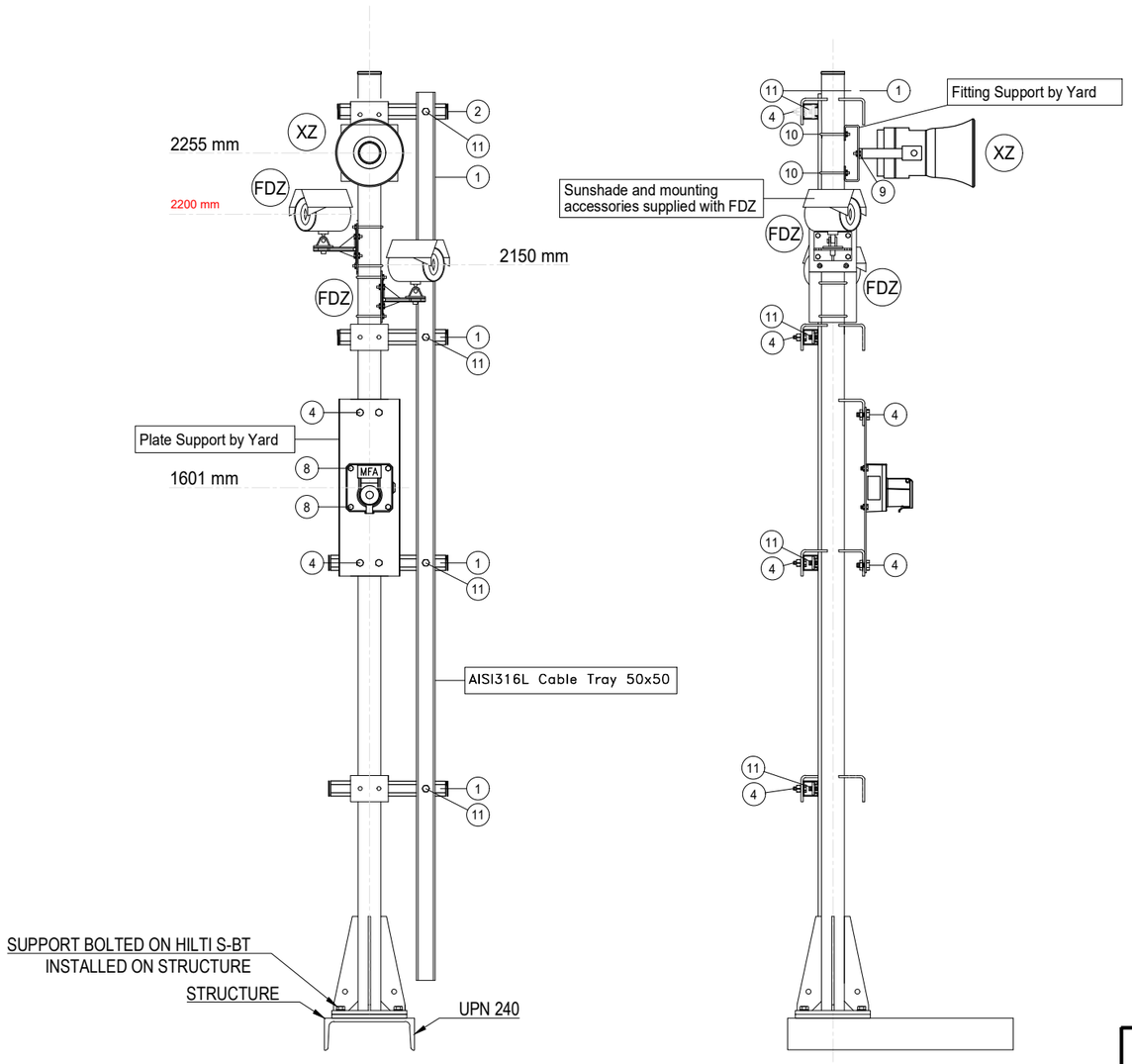
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A3	123A90–DDL–IN–DG–40016	066	01

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

FGS-05

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	12
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
~~9~~	~~AISI 316L BOLT M6x35 + NUT M6 + WASHER M6~~	2
10	AISI 316L 2" U BOLT M8+ N.2 NUT M8 + N.2 WASHER M8	2
11	AISI 316L SPRING NUT M8 FOR U-CHANNEL 41X41 + BOLT M8x35 + WASHER M8	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	FDZ	FLAME DETECTOR	950-FDZ-01102
	FDZ	FLAME DETECTOR	~~950-FDZ-02101~~
	XZ	SOUNDER	950-XZ-01102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-01102
2	FDZ	FLAME DETECTOR	950-FDZ-02102
	FDZ	FLAME DETECTOR	950-FDZ-03101
	XZ	SOUNDER	950-XZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03102
3	FDZ	FLAME DETECTOR	950-FDZ-03103
	FDZ	FLAME DETECTOR	~~950-FDZ-02104~~ 950-FDZ-02102
	XZ	SOUNDER	950-XZ-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03101

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_E	13/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

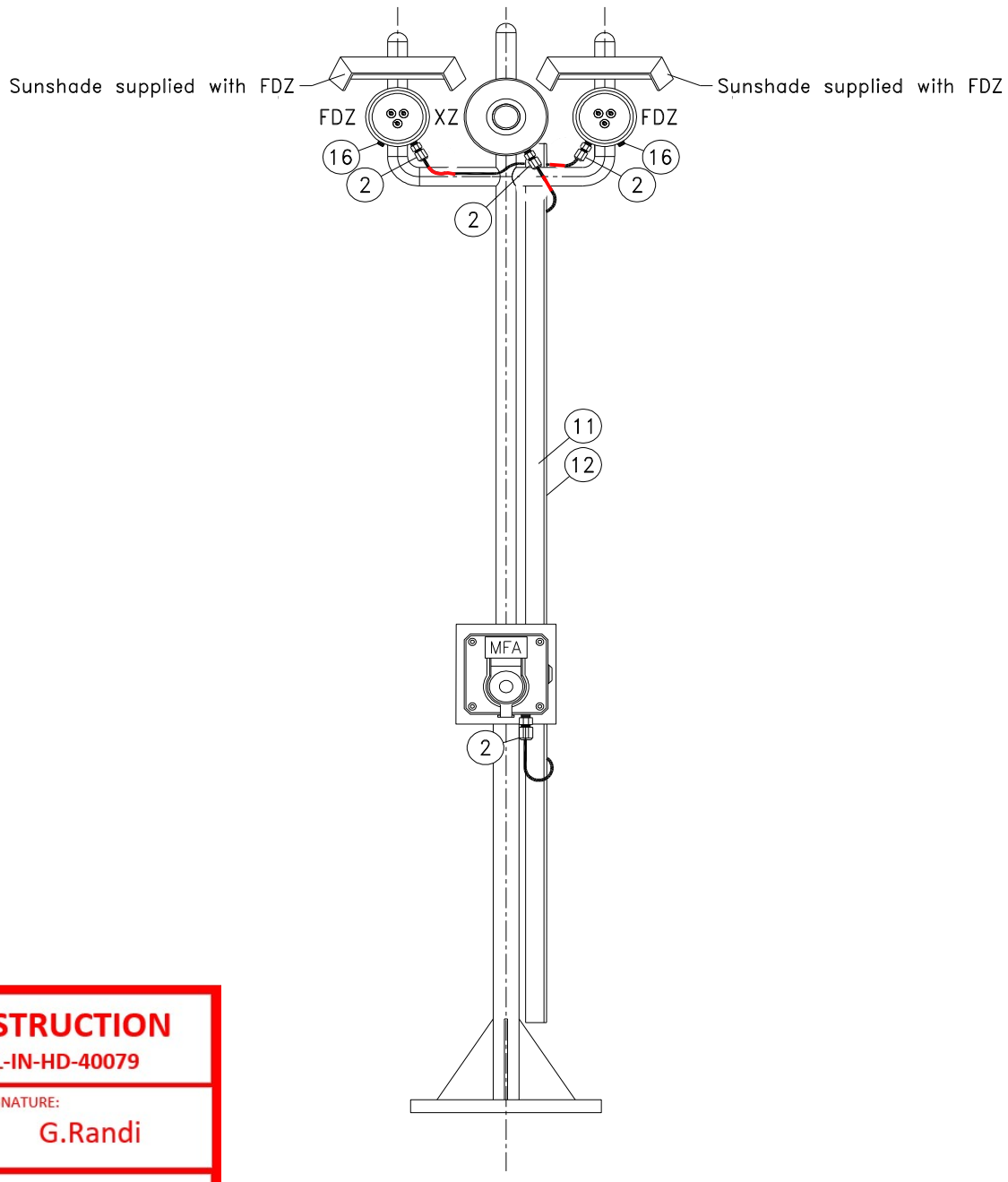
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 024	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-FDZ-01102
	950-XZ-01102
	~~950-FDZ-02101~~
	950-MFA-01102
2	950-FDZ-02102
	950-XZ-03102
	950-FDZ-03101
	950-MFA-03102
3	950-FDZ-03103
	950-XZ-03101
	950-FDZ-02104
	950-MFA-03101

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

REV.:	DATE:	SIGNATURE:
2_D	13/11/24	G.Randi

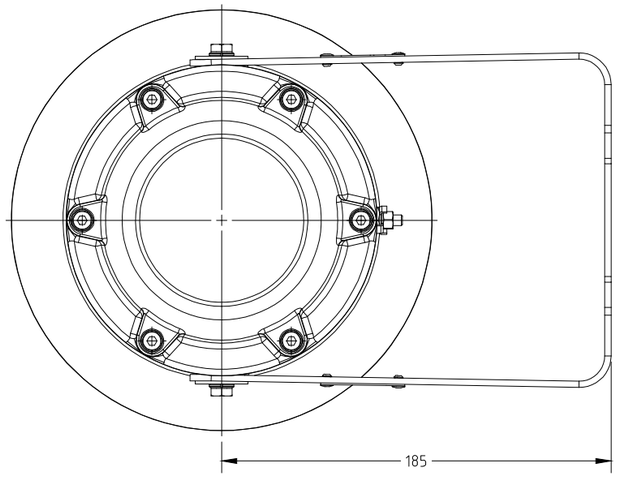
ROSETTI MARINO SpA

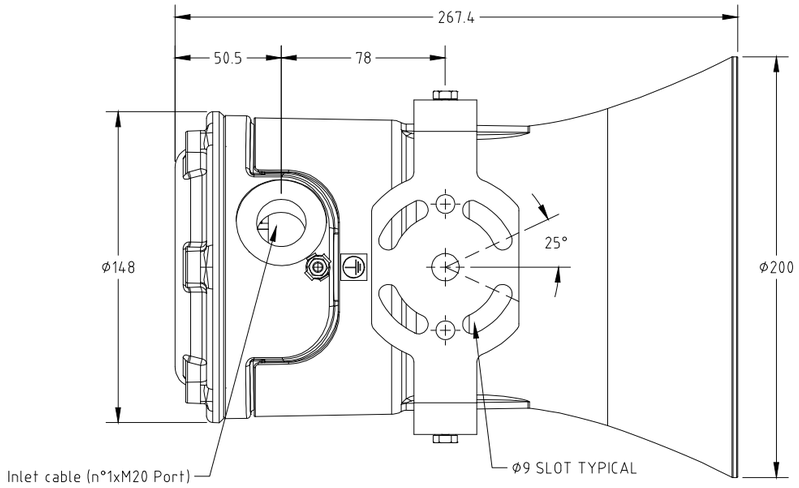
NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	2
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

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SOUNDER





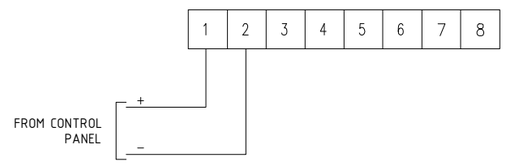
ITEM	DESCRIPTIONS	NR
1	Sounder, MEDC DM3BMSD048DT1BNR	1
2		
3		
4		
5		
6		
7		
8		
9		
10		

INSTALLATION QUANTITY

17

NOTE:
DUTY LABEL: EMERGENCY SHUTDOWN ALARM

WIRING



FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
SOUNDER

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 023

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

SOUNDER – TAG

POS.	TAG NUMBER
1	950-XZ-01101
2	950-XZ-01102
3	950-XZ-02101
4	950-XZ-03101
5	950-XZ-03102
6	950-XZ-04101
7	950-XZ-04102
8	950-XZ-04201
9	950-XZ-04202
10	950-XZ-04203
11	950-XZ-05101
12	950-XZ-05102
13	950-XZ-05103
14	950-XZ-05104
15	950-XZ-06101
16	950-XZ-06201
17	950-XZ-07101

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
SOUNDER – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 024

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

SOUNDER

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-XZ-01101	FZ-01 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
2	950-XZ-01102	FZ-01 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
3	950-XZ-02101	FZ-02 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
4	950-XZ-03101	FZ-03 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
5	950-XZ-03102	FZ-03 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
6	950-XZ-04101	FZ-04 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
7	950-XZ-04102	FZ-04 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
8	950-XZ-04201	FZ-04 SOUNDER ACT. - B-400 INDOOR	EMERGENCY SHUTDOWN ALARM
9	950-XZ-04202	FZ-04 SOUNDER ACT. - B-300 INDOOR	EMERGENCY SHUTDOWN ALARM
10	950-XZ-04203	FZ-04 SOUNDER ACT. - B-200 INDOOR	EMERGENCY SHUTDOWN ALARM
11	950-XZ-05101	FZ-05 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
12	950-XZ-05102	FZ-05 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
13	950-XZ-05103	FZ-05 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
14	950-XZ-05104	FZ-05 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
15	950-XZ-06101	FZ-06 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
16	950-XZ-06201	FZ-06 SOUNDER ACT. - B-100 INDOOR	EMERGENCY SHUTDOWN ALARM
17	950-XZ-07101	FZ-07 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM

File: 1724000821-IN-DS-00004-02.xlsx
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DB3BM sounders range up to 116dB

Ex d, weatherproof



Overview

The DB3BM is a high power explosion proof sounder, introduced as a replacement for the current DB1 / DB1H with improved functionality and performance. Certified for use in a wide range of temperatures from -60°C to +85°C the Ex enclosure is manufactured in either marine grade alloy or stainless steel with a rugged thermoplastic flare providing a corrosion free and aesthetically pleasing product.

Capable of producing 116 dB @ 1m and with a range of pre-recorded tones, the DB3BM includes an integral volume control which is ideal when a lower output is required.

The unit is provided with versatile control options allowing compatibility with a wide range of control methods and PLCs.

The standard DC unit provides 3 tone stages, each stage has 28 tones available which can be independently selected. The unit can be controlled by reversing the polarity of the power supply (2 stage) or providing a common negative and switching between multiple positive supplies.

The DB3BM proves its versatility by additionally being able to work with a common positive supply and switching the negatives. The tone stages of the DB3BM can also be controlled via voltage free contacts provided by a control panel.

The flexibility of the range continues with a wide range of supply voltages. The short flare option is a worthy addition to the range offering a high SPL in a compact unit.

Features

- UKEX / ATEX / IECEx
  Ex db IIC T4/T5/T6 Gb
  Ex tb IIIC T4/T5/T6 Db
- Certified temperature: –60°C to +85°C
- IP66 & IP67 (terminal only)
- Up to 116 dB output @ 1 m
- Integral volume control
- 28 tones, user selectable
- 3 stage unit remotely switchable
- Tones can be programmed to customer's specification
- DC supply voltage between 12 V and 48 V
- End of line resistor option
- Sounder & beacon combination units available, for further details contact MEDC
- Ex enclosure – marine grade alloy or stainless steel
- Flare - high impact thermoplastic polyester
- Stainless steel mounting bracket and cover screws
- Mounting bracket has ratchet facility as standard
- Swivel bracket standard on Stainless steel unit, optional on Alloy units



Stainless steel body, short flare version

ATEX IECEx UKCA

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
United Kingdom
NG17 5FB

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Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

ATEX Ex db	Cert. no. UL 21 ATEX02559X. Certified to: EN IEC 60079-0, EN 60079-1, 31 Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db, IP66 (IP65 short flare)
IECEx Ex db	Cert. no. IECEx ULD 21.0017X. Certified to: IEC60079-0,1,31 Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db, IP66 (IP65 short flare)
UKEX Ex db	Cert. no. UL21UKEX2209X. Certified to: EN IEC 60079-0, EN 60079-1, 31 Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db IP66 (IP65 short flare)
Safe Area	EN 61010-1, EN 60529, EN61000-6

Specifications

Material	Ex enclosure – marine grade alloy or stainless steel Flare - flame retardant, high impact, UV stable, thermoplastic polyester (UV stability tested to ISO 4892 part 3) Hardware - bracket, fixings and captive cover screws in 316 stainless steel
Fire retardancy	Outer flare - thermoplastic polyester. V0 flammability rating
Finish	Body – alloy: painted black. Stainless steel: painted black. Flare - natural black, natural red or painted as specified
Voltage	DC: 12 - 48 V. AC: Up to 254 V. if using EOL resistor/s the maximum power dissipation must be limited to 3 W.
Weight	Alloy - 4.4 kg, stainless steel 8.35 kg based on long flare DC unit
Ingress protection	IP66 & IP67 (terminal only). IP65 short flare
Entries	Up to 2 x M20 or M25 or ½"or ¾" NPT. Blanking plug available
Terminals	AC: 4 x 1.5mm² (loop in / out power), 3 x 2.5mm² (tone selection) (standard unit only) DC: 8 x 2.5mm² (8 for loop in / out power and tone selection) (standard unit only)
Mounting arrangement	Stainless steel bracket with ratchet facility, optional swivel bracket available. Swivel standard on stainless steel unit
Labels	Optional duty and tag labels available
Tone information	28 tones per stage. Additional custom tones available (contact MEDC) Suitable for use with 200 Hz tones
Relative Humidity	99% Non-condensing

Tone activation and selection

Voltage	Unit	No.of stages	Tone activation	Tone selection
DC	Standard	1	Apply power	1 x DIP switch
		2	Reverse polarity	2 x DIP switches
			Common -ve with 2 +ve supplies	2 x DIP switches
			*Common +ve with 2 -ve supplies	2 x DIP switches
		3	Common -ve with 3 +ve supplies	3 x DIP switches
	Alternative tone activation (Option M)	2	*Common -ve with 2 +ve supplies	2 x DIP switches
		3	Common +ve with 3 -ve supplies	3 x DIP switches
	Alternative tone activation (remote) (Option R)	1-5	Volt free activation (remote switching)	1 x DIP switch for stage 1. Tone pre-selected for subsequent stages
AC	Standard	1	Apply power	1 x DIP switch
	Alternative tone activation (remote) (Option R)	1-2	Volt free activation (remote switching)	1 x DIP switch for stage 1. Tone preselected for the 2nd stage

*Reverse polarity line monitoring can be used with common positive or negative switching to give up to 2 operational stages and a 3rd monitoring connection. An EOL resistor can be fitted as shown in the technical manual. All connection details are shown in the technical manual.

Current consumption: Based on a continuous 970Hz tone

Voltage	Current for IIC unit	Current for IIIC unit
12 Vdc	700 mA	716 mA
24 Vdc	329 mA	339 mA
48 Vdc	171 mA	173 mA
110 Vac	115 mA	122 mA
120 Vac	106 mA	113 mA
220 Vac	59 mA	63 mA
230 Vac	52 mA	55 mA
240 Vac	55 mA	58 mA
254 Vac	59 mA	63 mA

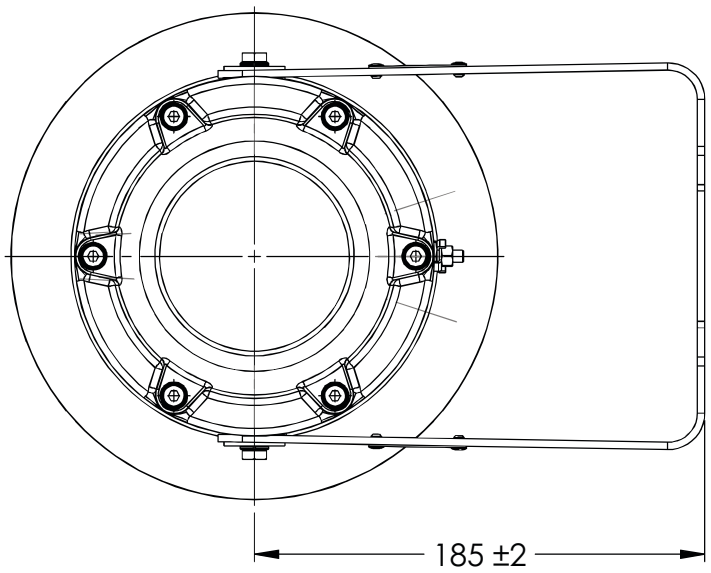
Certified temperature	Ex d/UL min	Max
	-60°C	+85°C

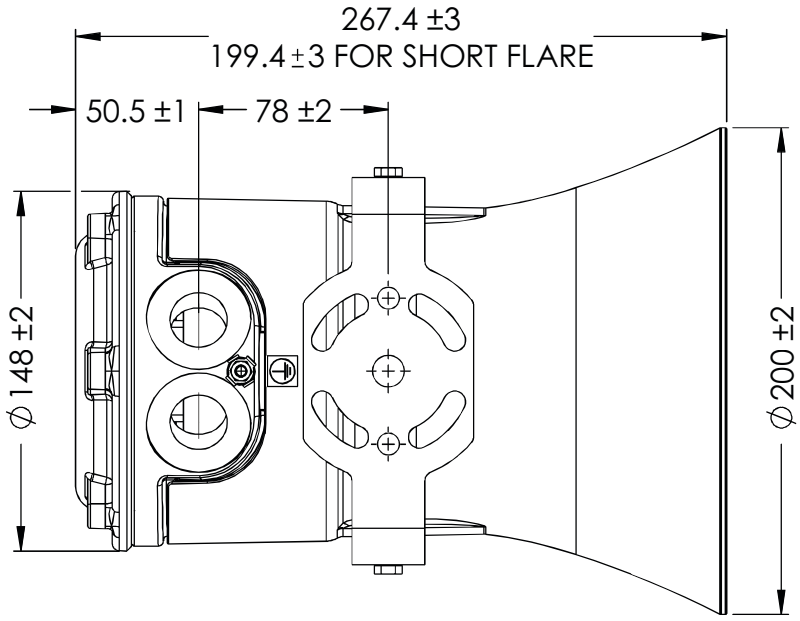
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

Max output (dB) 1400Hz @ 1m	Short Flare	Long Flare
	113 dB	116 dB

For Labels and Entries select any option as required. For Options select either (N) None or (E) EOL as required
Tolerance +/-3dB. Please see the technical manual for tone specific SPL values

General arrangement drawing (all dimensions in mm)





Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model

DB3BM

Material

S

Finish	Code
Alloy	A
Stainless Steel	S

Ex Certification

D

Ex Certification	Code
UKEX/ATEX Ex d	D
IECEx Ex d	J
Weatherproof	W

Voltage

048

Voltage	Code
12-48 Vdc	048‡
110 Vac	110
120 Vac	120*
220 Vac	220
230 Vac	230
240 Vac	240*
254 Vac	254

*Complies with UL regulated power supply requirements

Labels

DT

Labels	Code
None	N
Duty	D*
Tag	T*

*Please specify

Entries

1B

Entries	Code
1 x M20	1B
2 x M20	2B
2 x M20 inc 1 x plug	2BP
1 x ½"NPT	1C
2 x ½" NPT	2C
2 x ½" NPT inc 1 x plug	2CP
1 x M25	1D
2 x M25	2D
2 x M25 inc 1x plug	2DP
1 x ¾" NPT	1E
2 x ¾" NPT	2E
2 x ¾" NPT inc 1x plug	2EP

Options

N

Options	Code
None	N
Swivel bracket	B‡
EOL	E*
Alternative tone activation	M**
Volt free activation (remote)	R**
Short flare	S
Custom tones (not std 27)	TΔ

‡ Alloy only - stainless steel has swivel as standard
*Specify value max power dissipation is 3W
**These options cannot be selected together
ΔSpecify details

Finish

R (RAL 3020)

Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*Please specify

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
365	02	950-XL-06102	FIRE FLASH BEACON	FZ-06 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/10	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
366	02	950-XL-06104	FIRE FLASH BEACON	FZ-06 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/11	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
367	02	950-XL-06202	FIRE FLASH BEACON	FZ-06 FIRE BEACON ACT. - B-100 INDOOR	MEDC	SM87LEDS	225420465/50/12	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
368	02	950-XL-07102	FIRE FLASH BEACON	FZ-07 FIRE BEACON ACTIVATION	MEDC	SM87LEDS	225420465/50/13	Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55ºC/ T70ºC Db	1724000821-IN-DS-00004	Baseefa 03 ATEX 0222	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	NONE
369	02	950-XZ-01101	SOUNDER	FZ-01 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/01	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
370	02	950-XZ-01102	SOUNDER	FZ-01 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/02	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
371	02	950-XZ-02101	SOUNDER	FZ-02 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/03	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
372	02	950-XZ-03101	SOUNDER	FZ-03 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/04	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
373	02	950-XZ-03102	SOUNDER	FZ-03 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/05	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
374	02	950-XZ-04101	SOUNDER	FZ-04 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/06	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
375	02	950-XZ-04102	SOUNDER	FZ-04 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/07	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
376	02	950-XZ-04201	SOUNDER	FZ-04 SOUNDER ACT. - B-400 INDOOR	MEDC	DB3BM	225420465/60/08	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
377	02	950-XZ-04202	SOUNDER	FZ-04 SOUNDER ACT. - B-300 INDOOR	MEDC	DB3BM	225420465/60/09	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
378	02	950-XZ-04203	SOUNDER	FZ-04 SOUNDER ACT. - B-200 INDOOR	MEDC	DB3BM	225420465/60/10	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
379	02	950-XZ-05101	SOUNDER	FZ-05 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/11	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
380	02	950-XZ-05102	SOUNDER	FZ-05 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/12	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
381	02	950-XZ-05103	SOUNDER	FZ-05 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/13	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
382	02	950-XZ-05104	SOUNDER	FZ-05 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/14	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
383	02	950-XZ-06101	SOUNDER	FZ-06 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/15	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
384	02	950-XZ-06201	SOUNDER	FZ-06 SOUNDER ACT. - B-100 INDOOR	MEDC	DB3BM	225420465/60/16	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
385	02	950-XZ-07101	SOUNDER	FZ-07 SOUNDER ACTIVATION	MEDC	DB3BM	225420465/60/17	Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db	1724000821-IN-DS-00004	UL 21 ATEX 2559X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
386	02	77-HS-001A	PUSH BUTTON DPDT CONTACT	B-100 Fire Damper AHU1 Inlet Air	EATON	GHG 432	24-11391	II 2 G Ex ed ib m IIC T6	1724000821-IN-DS-00004	BVS 22 ATEX E032 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
387	02	77-HS-001B	PUSH BUTTON DPDT CONTACT	B-100 Fire Damper AHU1 Inlet Air	EATON	GHG 432	24-11392	II 2 G Ex ed ib m IIC T6	1724000821-IN-DS-00004	BVS 22 ATEX E032 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
388	02	77-HS-002A	PUSH BUTTON DPDT CONTACT	B-100 Fire Damper AHU2 Inlet Air	EATON	GHG 432	24-11393	II 2 G Ex ed ib m IIC T6	1724000821-IN-DS-00004	BVS 22 ATEX E032 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
389	02	77-HS-002B	PUSH BUTTON DPDT CONTACT	B-100 Fire Damper AHU2 Inlet Air	EATON	GHG 432	24-11394	II 2 G Ex ed ib m IIC T6	1724000821-IN-DS-00004	BVS 22 ATEX E032 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
390	02	77-HS-003A	PUSH BUTTON DPDT CONTACT	B-100 Fire Damper Exhaust Air	EATON	GHG 432	24-11395	II 2 G Ex ed ib m IIC T6	1724000821-IN-DS-00004	BVS 22 ATEX E032 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
391	02	77-HS-003B	PUSH BUTTON DPDT CONTACT	B-100 Fire Damper Exhaust Air	EATON	GHG 432	24-11396	II 2 G Ex ed ib m IIC T6	1724000821-IN-DS-00004	BVS 22 ATEX E032 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES
392	02	77-HS-004A	PUSH BUTTON DPDT CONTACT	B-200 Fire Damper AHU3 Inlet Air	EATON	GHG 432	24-11397	II 2 G Ex ed ib m IIC T6	1724000821-IN-DS-00004	BVS 22 ATEX E032 X	Zone 2		1724000821	FORES ENGINEERING	NA	NA	NO	YES

[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: **UL 21 ATEX 2559X Rev. 0**

[4] Product: **DB4BM range of Loudspeakers and DB3BM range of Sounders**

[5] Manufacturer: **Eaton MEDC Ltd.**

[6] Address: **Unit B, Sutton Parkway, Oddicroft Lane, Sutton-in-Ashfield NG17 5FB UK**

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

[8] UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to 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 report no. **DK/ULD/ExTR21.0017/00.**

[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 product is subject to special conditions for safe 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 the certificate.

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

II 2 G Ex db IIC T* Gb

II 2 D Ex tb IIIC T*°C Db

(Tamb -60°C to +*°C)

*See Schedule for T class & ambient combination

Certification Manager
Jan-Erik Storgaard

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2021-08-11

Notified Body UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
Tel. +45 44 85 65 65, info.dk@ul.com, www.ul.com

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[13] [14]

Schedule
EU-TYPE EXAMINATION CERTIFICATE No.
UL 21 ATEX 2559X Rev. 0

[15] Description of Product

DB4BM Loudspeakers
The DB4BM Loudspeakers are comprised of a cylindrical metallic body and two metallic covers, two compartments are electrically connected by a bushing. The front cover is threaded and closes a flameproof chamber for housing the speaker driver assembly. In the front cover is a sintered wire mesh element that facilitates sound transmission. An elastomeric O-ring seal located within the cover provides against water ingress to the manufacturer's self-declared IPX6 protection when fitted with a long horn flare or self-declared IPX5 protection when fitted with a short horn flare.

The flanged rear cover closes a chamber that houses a transformer assembly and control PCB. An elastomeric O-ring seal located within the enclosure body provides against water ingress to the manufacturer's self-declared IPX6 and IPX7 protection. The cover is fixed with six M5 x 0.8 x 20mm long socket head screws of minimum property class A2-70, the screws can be both reduced shank and fully threaded to the screw head. Up to two M20 or M25 cable entries (alternative option 1/2" NPT or ¾" NPT) are provided in the side of the enclosure to accommodate suitably certified cable entries devices.
A non-metallic horn assembly comprising long, or short horn flare is fitted externally to the front cover, and along the sides, of the enclosure, together with a metallic mounting bracket.

DB3BM Sounders
The DM3BM Sounders are identical in construction to the DB4BM Loudspeakers with the exception that the flameproof chamber contains different components, including sound generating PCB's.

Performance testing
Not applicable.

Temperature range and Electrical Data

Loudspeakers

Type Designation	Rated Voltage Max.	Rated Power	Ambient Range / Temperature Class							
			-60°C to +40°C		-60°C to +55°C		-60°C to +70°C		-60°C to +85°C	
			Gas	Dust	Gas	Dust	Gas	Dust	Gas	Dust
DB4BM	25V ac	8W	T6	T85°C	T5	T100°C	-	-	T4	T135°C
DB4BM	25V ac	15W	T5	T100°C	-	-	-	-	T4	T135°C
DB4BM	25V ac	25W	T5	T100°C	-	-	T4	T135°C	T3	T200°C
DB4BM	70V ac	8W	T6	T85°C	T5	T100°C	-	-	T4	T135°C
DB4BM	70V ac	15W	T5	T100°C	-	-	-	-	T4	T135°C
DB4BM	70V ac	25W	T5	T100°C	-	-	T4	T135°C	T3	T200°C
DB4BM	100V ac	8W	T6	T85°C	T5	T100°C	-	-	T4	T135°C
DB4BM	100V ac	15W	T5	T100°C	-	-	-	-	T4	T135°C
DB4BM	100V ac	25W	T5	T100°C	-	-	T4	T135°C	T3	T200°C

Sounders

Type Designation	Rated Voltage Range	Rated Power	Ambient Range / Temperature Class							
			-60°C to +40°C		-60°C to +55°C		-60°C to +70°C		-60°C to +85°C	
			Gas	Dust	Gas	Dust	Gas	Dust	Gas	Dust
DB3BM	12-48V dc	15W	T6	T85°C	T5	T100°C	-	-	T4	T135°C
DB3BM	110/120V ac	15W	T6	T85°C	T5	T100°C	-	-	T4	T135°C
DB3BM	220/240V ac	15W	T6	T85°C	T5	T100°C	-	-	T4	T135°C
DB3BM	254V ac	15W	T6	T85°C	T5	T100°C	-	-	T4	T135°C

Routine Tests
Routine tests according to EN 60079-1 cl. 16. are not required, as the enclosures have been successfully tested at four times the reference pressure.

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[13] [14]

Schedule
EU-TYPE EXAMINATION CERTIFICATE No.
UL 21 ATEX 2559X Rev. 0

[16] Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this EU-Type Examination Certificate.

[17] Specific conditions of use:

- For replacement purposes M5 x 0.8 x 20 mm long cover bolts shall be used and shall have a property class of A2-70 or stronger. Reduced shank fasteners must be used with covers employing threaded holes. Fully threaded fasteners must be used with covers employing plain clearance holes.
- The flameproof joints are not intended to be repaired.
- Potential Electrostatic Charging Hazard. If the unit requires cleaning, only clean exterior with a damp cloth to avoid electrostatic charge build-up. See instructions for further guidance.
- If a metal certification label is attached to the horn it is known to be capable of retaining a 3.33 pF charge.

Condition of Manufacture

- The current/ power draw for DB3BM Sounder custom tones shall not exceed that of the worst-case French Fire Sound Tone (Tone 15).

[18] Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The trademark EATON will be used as the company identifier on the marking label.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.

This certificate may only be reproduced in its entirety and without any change, schedule included.

Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-12 & process: MC & discipline : I

Instrumental	70-12 F&G Devices FZ-03 (Electrolyser Area)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-FDZ-03102	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10001509	CJX43	100	2024-12-05	RFC 2
950-FDZ-03103	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10001510	CJX43	100	2024-12-11	RFC 2
950-GDZ-03101	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001535	CJX42	100	2025-01-14	RFC 2
950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001537	CJX42	100	2025-01-13	RFC 2
950-GDZ-03104	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001538	CJX42	100	2025-01-14	RFC 2
950-GDZ-03105	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10001539	CJX42	100	2025-01-14	RFC 2
950-MFA-03101	FZ-03 MFA Activation	ONSHORE	C10001545	CJX00	100	2024-12-05	RFC 2
950-MFA-03103	FZ-03 MFA Activation	ONSHORE	C10001547	CJX00	100	2024-12-05	RFC 2
950-XL-03101	FZ-03 Gas Beacon Activation	ONSHORE	C10001552	CJX00	100	2024-12-13	RFC 2
950-XL-03102	FZ-03 Fire Beacon Activation	ONSHORE	C10001553	CJX00	100	2024-12-13	RFC 2
950-XZ-03101	FZ-03 Sounder Activation	ONSHORE	C10001558	CJX00	100	2024-12-05	RFC 2
C-950-FDZ-03101/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	ONSHORE	C10002418	CJX10	100	2025-01-13	RFC 2
C-950-FDZ-03102/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	ONSHORE	C10002419	CJX10	100	2024-12-05	RFC 2
C-950-FDZ-03103/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	ONSHORE	C10002420	CJX10	100	2024-12-11	RFC 2
C-950-FDZ-03104/950-JE-03102	FLAME DETECTOR / MARSHALLING PCS	ONSHORE	C10002421	CJX10	100	2024-12-10	RFC 2
C-950-GDZ-03101/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002423	CJX10	100	2025-01-14	RFC 2
C-950-GDZ-03102/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002424	CJX10	100	2025-01-14	RFC 2
C-950-GDZ-03103/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002425	CJX10	100	2025-01-13	RFC 2
C-950-GDZ-03104/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002426	CJX10	100	2025-01-14	RFC 2
C-950-GDZ-03105/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10002427	CJX10	100	2025-01-14	RFC 2
C-950-GDZ-03107/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10000230	CJX10	100	2025-01-03	RFC 2
C-950-GDZ-03108/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10000231	CJX10	100	2025-01-03	RFC 2
C-950-GDZ-03109/950-JE-03101	GAS DETECTOR / MARSHALLING PCS	ONSHORE	C10000232	CJX10	100	2025-01-09	RFC 2
C-950-MFA-03101/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	ONSHORE	C10000297	CJX10	100	2024-12-05	RFC 2
C-950-MFA-03102/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	ONSHORE	C10000298	CJX10	100	2024-12-10	RFC 2
C-950-MFA-03103/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	ONSHORE	C10000299	CJX10	100	2024-12-05	RFC 2
C-950-MFA-03104/950-JE-03103	MANUAL FIRE ALARM / MARSHALLING PCS	ONSHORE	C10000300	CJX10	100	2024-12-10	RFC 2
C-950-XL-03101/950-JE-03104	BEACON / MARSHALLING PCS	ONSHORE	C10000329	CJX10	100	2024-12-13	RFC 2
C-950-XL-03102/950-JE-03104	BEACON / MARSHALLING PCS	ONSHORE	C10000330	CJX10	100	2024-12-13	RFC 2

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-12 & process: MC & discipline : I

Instrumental	70-12 F&G Devices FZ-03 (Electrolyser Area)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
C-950-XL-03103/950-JE-03104	BEACON / MARSHALLING PCS	ONSHORE	C10000331	CJX10	100	2024-12-16	RFC 2
C-950-XL-03104/950-JE-03104	BEACON / MARSHALLING PCS	ONSHORE	C10000332	CJX10	100	2024-12-16	RFC 2
C-950-XZ-03101/950-JE-03104	SOUNDER / MARSHALLING PCS	ONSHORE	C10000327	CJX10	100	2024-12-05	RFC 2
C-950-XZ-03102/950-JE-03104	SOUNDER / MARSHALLING PCS	ONSHORE	C10000328	CJX10	100	2024-12-11	RFC 2

ITEM	Tag	C-950-GDZ-03107/950-JE-03101 : GAS DETECTOR / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10000230		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	1X3X2,5 mm2	Color	ORANGE
From	950-GDZ-03107		To	950-JE-03101	

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.	OK
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.	PL
9	Check cable labelling is in accordance with specification.	PL
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	0,2	Ω
	SCREEN	0,2	Ω
	EARTH	NA	Ω
	ARMr	0,2	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

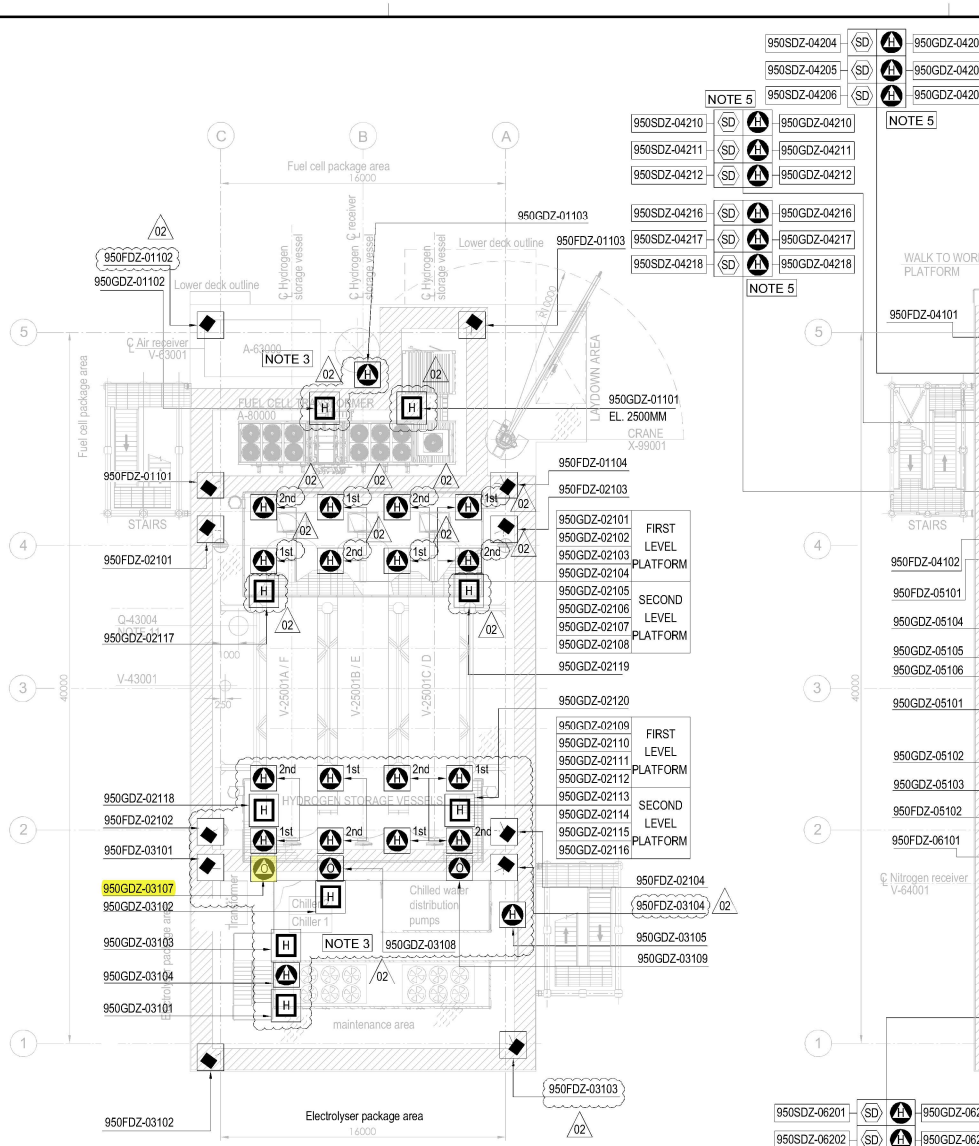
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 4: refer to PL C30000679

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Francesco Zucca	Luca Mussi	
Date	2024-12-30	2025-01-03	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-30T14:53:39.945Z	PROVERLIS Digitaly signed by Luca Mussi 2025-01-03T15:28:15.844Z	



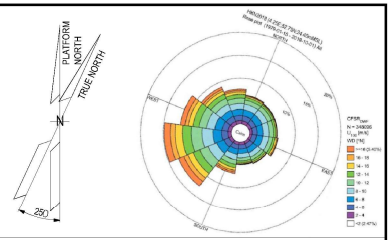
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION

FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

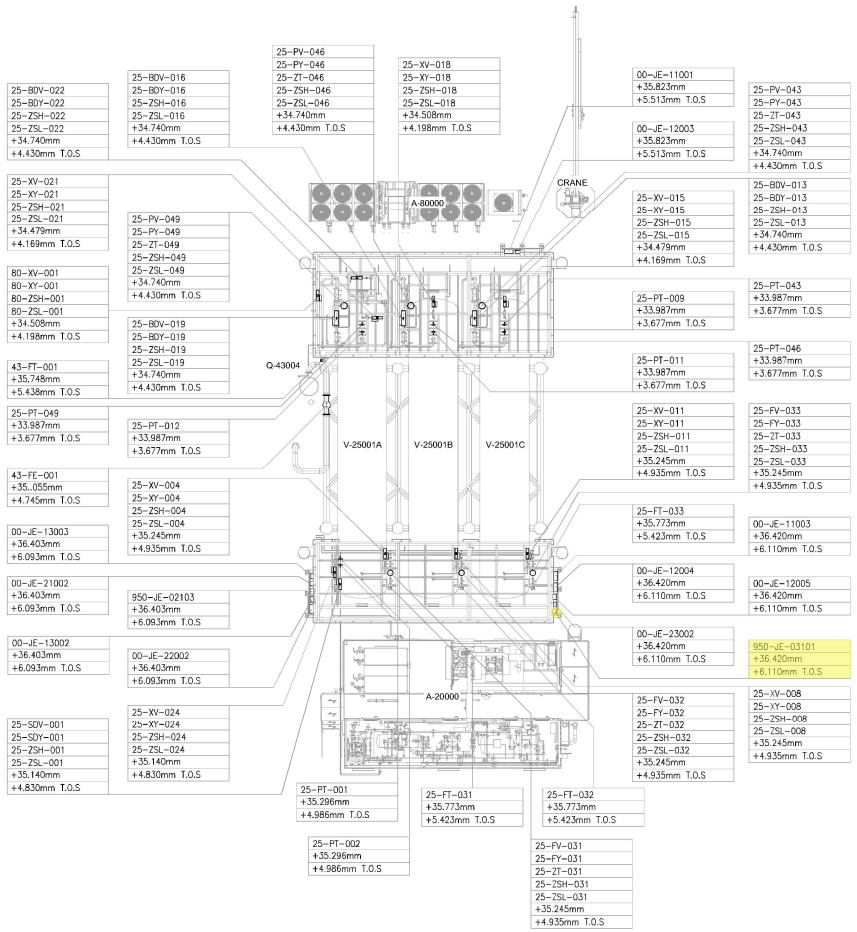
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027		SHEET 001 REV. 02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

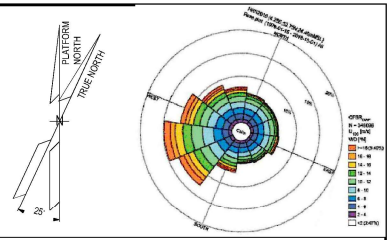
REV. 02



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. 123-A90-DDL-IN-DG-40016 REV. 01

FIELD | MULTICABLE | I&T EQUIPMENT ROOM (ITER)

INSTRUMENTS | JUNCTION BOX 950-JE-03101 | No. | MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

Instrument	Cable	Junction Box	Marshalling Cabinet
950-GDZ-03101 (PWR+, 4-20mA, PWR-; RD, WH, BK)	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS (NOTE-2)	TB-1: 1, 2, 3, SH	TR1 (RD, WH, BK): 1, 2, 3
950-GDZ-03102 (PWR+, 4-20mA, PWR-; RD, WH, BK)	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS (NOTE-2)	4, 5, 6, SH	TR2 (RD, WH, BK): 4, 5, 6
950-GDZ-03103 (PWR+, 4-20mA, PWR-; RD, WH, BK)	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS (NOTE-2)	7, 8, 9, SH	TR3 (RD, WH, BK): 7, 8, 9
950-GDZ-03104 (PWR+, 4-20mA, PWR-; RD, WH, BK)	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS (NOTE-2)	10, 11, 12, SH	TR4 (RD, WH, BK): 10, 11, 12
950-GDZ-03105 (PWR+, 4-20mA, PWR-; RD, WH, BK)	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS (NOTE-2)	13, 14, 15, SH	TR5 (RD, WH, BK): 13, 14, 15
950-GDZ-03107 (PWR+, 4-20mA, PWR-; RD, WH, BK)	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS (NOTE-2)	16, 17, 18, SH	TR6 (RD, WH, BK): 16, 17, 18
950-GDZ-03108 (PWR+, 4-20mA, PWR-; RD, WH, BK)	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS (NOTE-2)	19, 20, 21, SH	TR7 (RD, WH, BK): 19, 20, 21
950-GDZ-03109 (PWR+, 4-20mA, PWR-; RD, WH, BK)	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS (NOTE-2)	22, 23, 24, SH	TR8 (RD, WH, BK): 22, 23, 24
		SPARE, 25, 26, 27, SH	TR9 (RD, WH, BK): SPARE, 25, 26
		SPARE, 28, 29, 30, SH	TR10 (RD, WH, BK): SPARE, 28, 29
		SPARE, 31, 32, 33, SH	TR11 (RD, WH, BK): SPARE, 31, 32
		SPARE, 34, 35, 36, SH, OS	TR12 (RD, WH, BK): SPARE, 34, 35

950-JE-03101/B400-FGS-003
~~950-JE-03101/B400-FGS-002~~
12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03101: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

TR1 (Shield Bar)	950-GDZ-03101
TR2 (Shield Bar)	950-GDZ-03102
TR3 (Shield Bar)	950-GDZ-03103
TR4 (Shield Bar)	950-GDZ-03104
TR5 (Shield Bar)	950-GDZ-03105
TR6 (Shield Bar)	950-GDZ-03107
TR7 (Shield Bar)	950-GDZ-03108
TR8 (Shield Bar)	950-GDZ-03109
TR9 (Shield Bar)	SPARE
TR10 (Shield Bar)	SPARE
TR11 (Shield Bar)	SPARE
TR12 (Shield Bar)	SPARE

I.E. Shield Bar

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03101

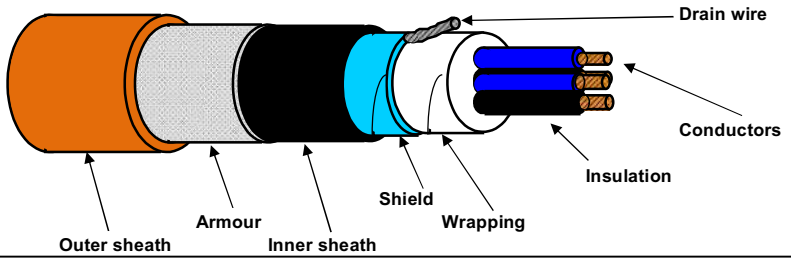
CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 036	REV. 01

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

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 right to privacy and confidentiality must be used in the sense of the article 13 of the Regulation (UE) 2016/679, also by the subscribers, under the civil and criminal profiles of the falsification of informatives, 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-950-GDZ-03107/950-JE-03101	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-GDZ-03107	Gas Detector	Upper Deck		950-JE-03101	AI JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-14D / U-SEC-14E / U-SEC-14F

ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-950-GDZ-03108/950-JE-03101 : GAS DETECTOR / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10000231		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	1X3X2,5 mm2	Color	ORANGE
From	950-GDZ-03108		To	950-JE-03101	

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.	PL
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	OK
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.	PL
9	Check cable labelling is in accordance with specification.	PL
10	Check that glands, shrouds and earthing are in accordance with specification.	PL
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		0,3	Ω
	SCREEN		0,3	Ω
	EARTH		NA	Ω
	ARMr		0,3	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

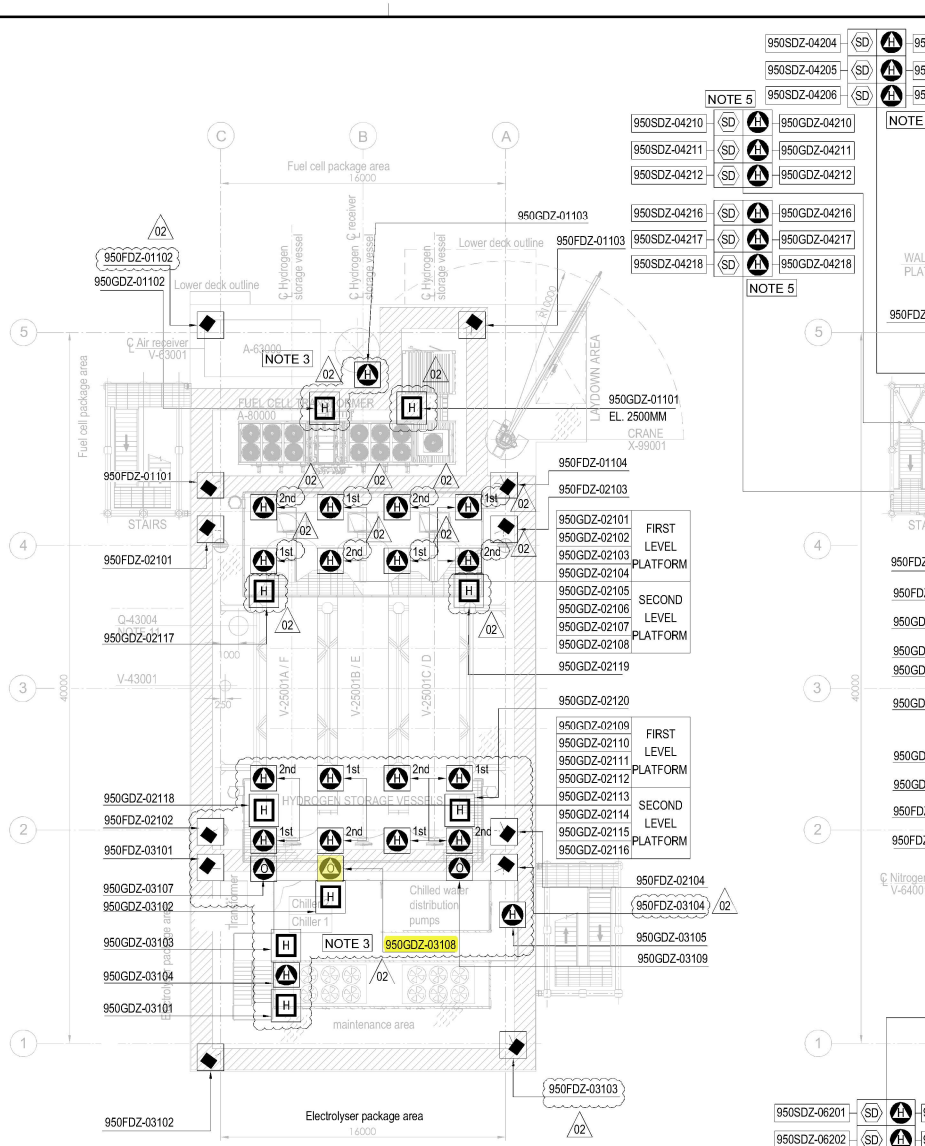
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments

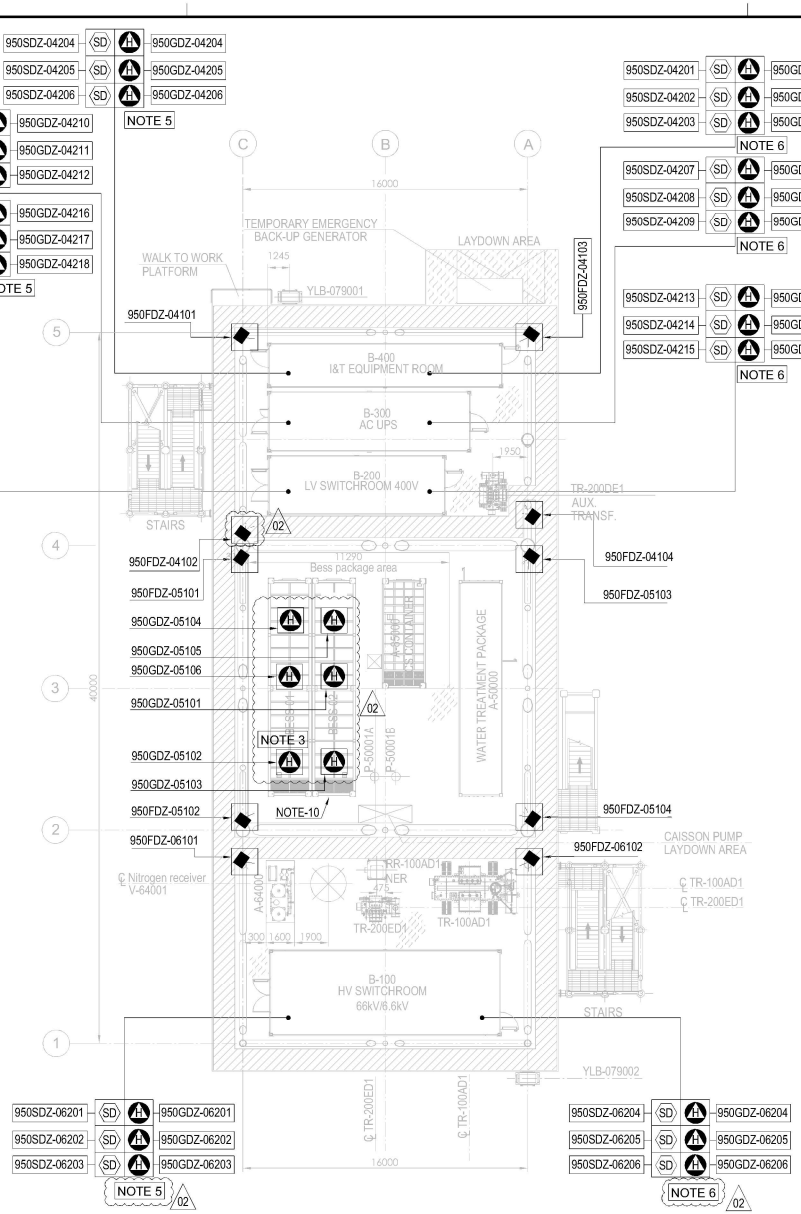
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Francesco Zucca	Luca Mussi	
Date	2024-12-30	2025-01-03	
Signature	Digitaly signed by Francesco Zucca 2024-12-30T14:53:57.245Z	Digitaly signed by Luca Mussi 2025-01-03T10:50:27.163Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

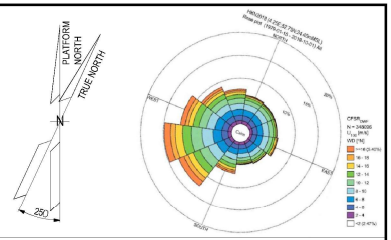


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION

FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

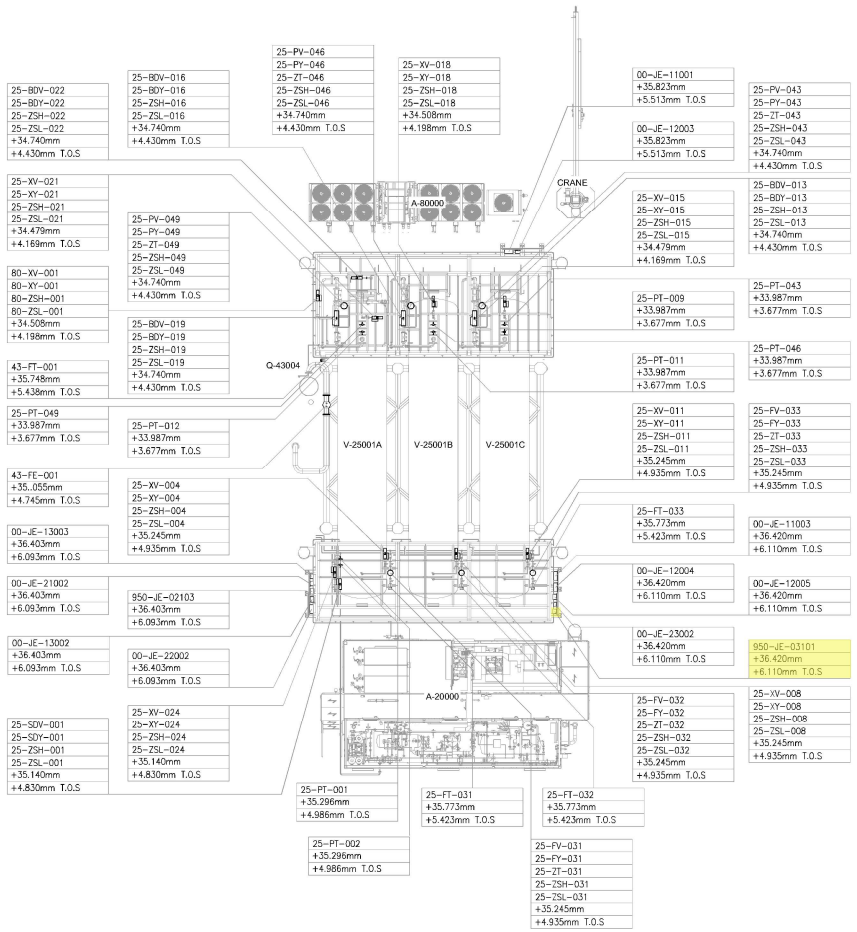
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

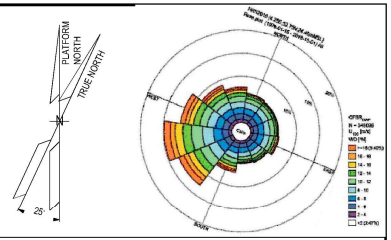
REV. 02



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. 123-A90-DDL-IN-DG-40016 REV. 01

FIELD | MULTICABLE | I&T EQUIPMENT ROOM (ITER)

INSTRUMENTS | JUNCTION BOX 950-JE-03101 | No. | MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

950-GDZ-03101 (PWR+, 4-20mA, PWR-) RD, WH, BK — NOTE-2
C-950-GDZ-03101/950-JE-03101
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-GDZ-03102 (PWR+, 4-20mA, PWR-) RD, WH, BK — NOTE-2
C-950-GDZ-03102/950-JE-03101
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-GDZ-03103 (PWR+, 4-20mA, PWR-) RD, WH, BK — NOTE-2
C-950-GDZ-03103/950-JE-03101
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-GDZ-03104 (PWR+, 4-20mA, PWR-) RD, WH, BK — NOTE-2
C-950-GDZ-03104/950-JE-03101
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-GDZ-03105 (PWR+, 4-20mA, PWR-) RD, WH, BK — NOTE-2
C-950-GDZ-03105/950-JE-03101
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-GDZ-03107 (PWR+, 4-20mA, PWR-) RD, WH, BK — NOTE-2
C-950-GDZ-03107/950-JE-03101
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-GDZ-03108 (PWR+, 4-20mA, PWR-) RD, WH, BK — NOTE-2
C-950-GDZ-03108/950-JE-031001
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-GDZ-03109 (PWR+, 4-20mA, PWR-) RD, WH, BK — NOTE-2
C-950-GDZ-03109/950-JE-031001
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

	1	RD, WH, BK	TR1
	2		
	3		
	SH		
	4	RD, WH, BK	TR2
	5		
	6		
	SH		
	7	RD, WH, BK	TR3
	8		
	9		
	SH		
	10	RD, WH, BK	TR4
	11		
	12		
	SH		
	13	RD, WH, BK	TR5
	14		
	15		
	SH		
	16	RD, WH, BK	TR6
	17		
	18		
	SH		
	19	RD, WH, BK	TR7
	20		
	21		
	SH		
	22	RD, WH, BK	TR8
	23		
	24		
	SH		
SPARE	25	RD, WH, BK	TR9
SPARE	26		
SPARE	27		
	SH		
SPARE	28	RD, WH, BK	TR10
SPARE	29		
SPARE	30		
	SH		
SPARE	31	RD, WH, BK	TR11
SPARE	32		
SPARE	33		
	SH		
SPARE	34	RD, WH, BK	TR12
SPARE	35		
SPARE	36		
	SH		
	OS		

950-JE-03101/B400-FGS-003
~~950-JE-03101/B400-FGS-002~~
12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03101

TR1	1	RD, WH, BK	
Shield Bar	2		950-GDZ-03101
	3		
TR2	4	RD, WH, BK	
Shield Bar	5		950-GDZ-03102
	6		
TR3	7	RD, WH, BK	
Shield Bar	8		950-GDZ-03103
	9		
TR4	10	RD, WH, BK	
Shield Bar	11		950-GDZ-03104
	12		
TR5	13	RD, WH, BK	
Shield Bar	14		950-GDZ-03105
	15		
TR6	16	RD, WH, BK	
Shield Bar	17		950-GDZ-03107
	18		
TR7	19	RD, WH, BK	
Shield Bar	20		950-GDZ-03108
	21		
TR8	22	RD, WH, BK	
Shield Bar	23		950-GDZ-03109
	24		
TR9	25	RD, WH, BK	
Shield Bar	26		SPARE
	27		
TR10	28	RD, WH, BK	
Shield Bar	29		SPARE
	30		
TR11	31	RD, WH, BK	
Shield Bar	32		SPARE
	33		
TR12	34	RD, WH, BK	
Shield Bar	35		SPARE
	36		

I.E. Shield Bar

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03101

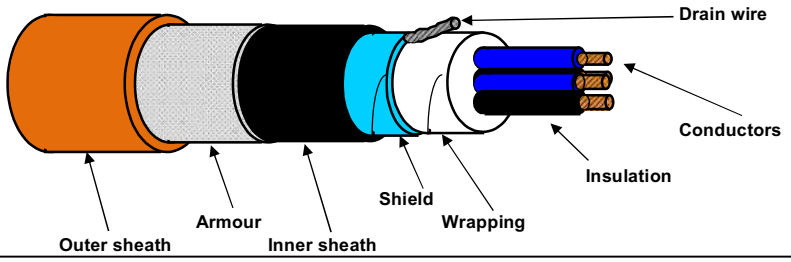
CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 036	REV. 01

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

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 right to privacy and confidentiality must be used in the sense of the article 13 of the Regulation (UE) 2016/679, also by the subscribers, under the civil and criminal profiles of the falsification of informatives, 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-950-GDZ-03108/950-JE-03101	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-GDZ-03108	Gas Detector	Upper Deck		950-JE-03101	AI JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-14D / U-SEC-14E / U-SEC-14F

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-950-GDZ-03109/950-JE-03101 : GAS DETECTOR / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10000232		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	1X3X2,5 mm2	Color	ORANGE
From	950-GDZ-03109		To	950-JE-03101	

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.	PL
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	PL
10	Check that glands, shrouds and earthing are in accordance with specification.	PL
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		0,11	Ω
	SCREEN		0,11	Ω
	EARTH		NA	Ω
	ARMr		0,11	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

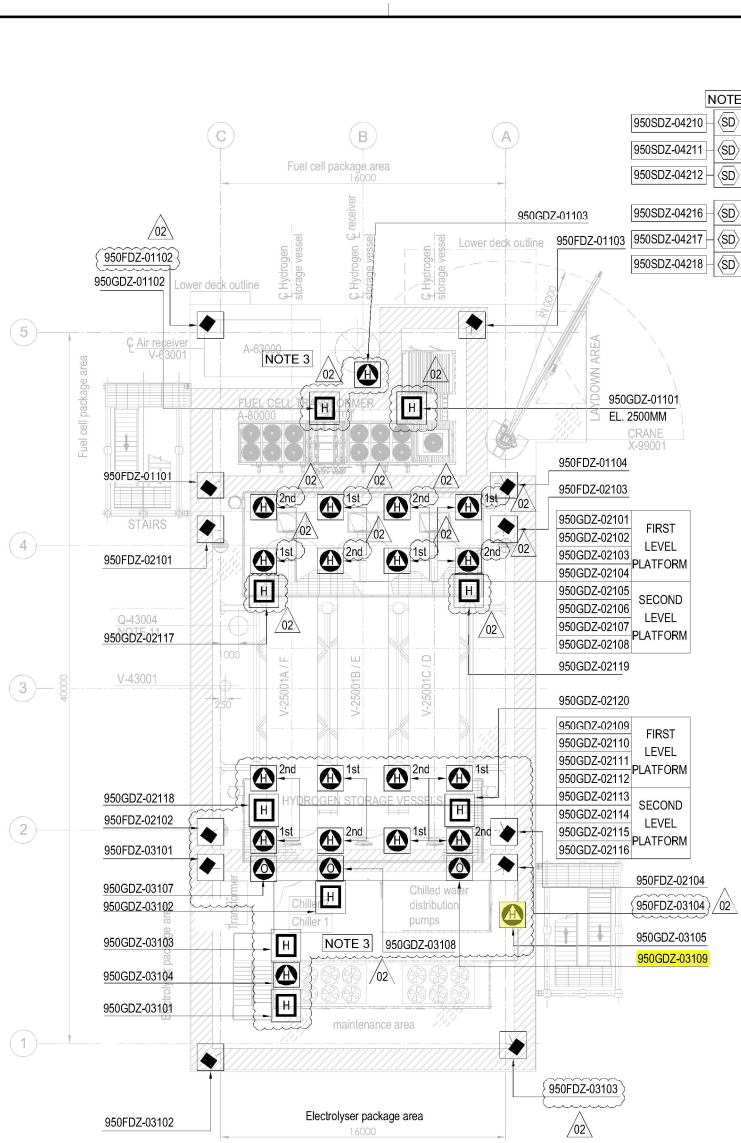
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

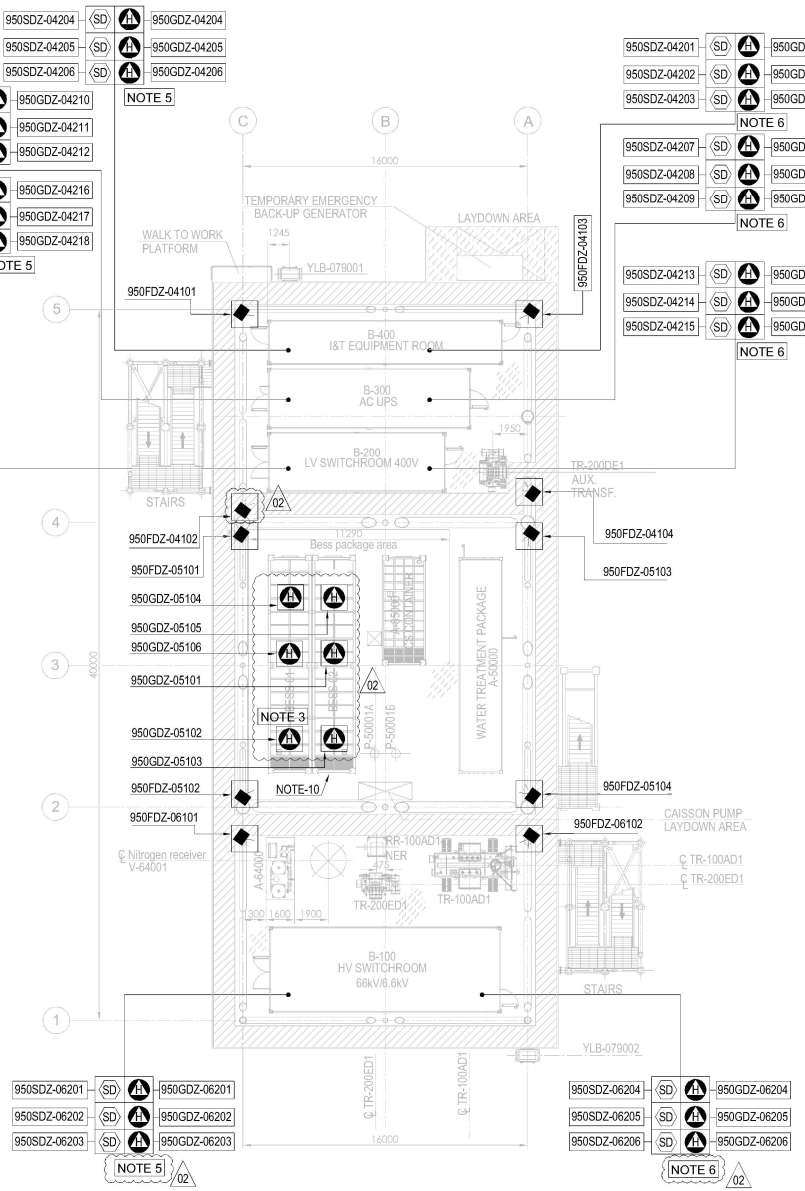
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

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	2025-01-08	2025-01-09	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-08T09:52:33.465Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-09T17:06:31.821Z	



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

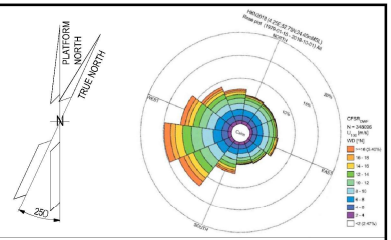


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION

FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

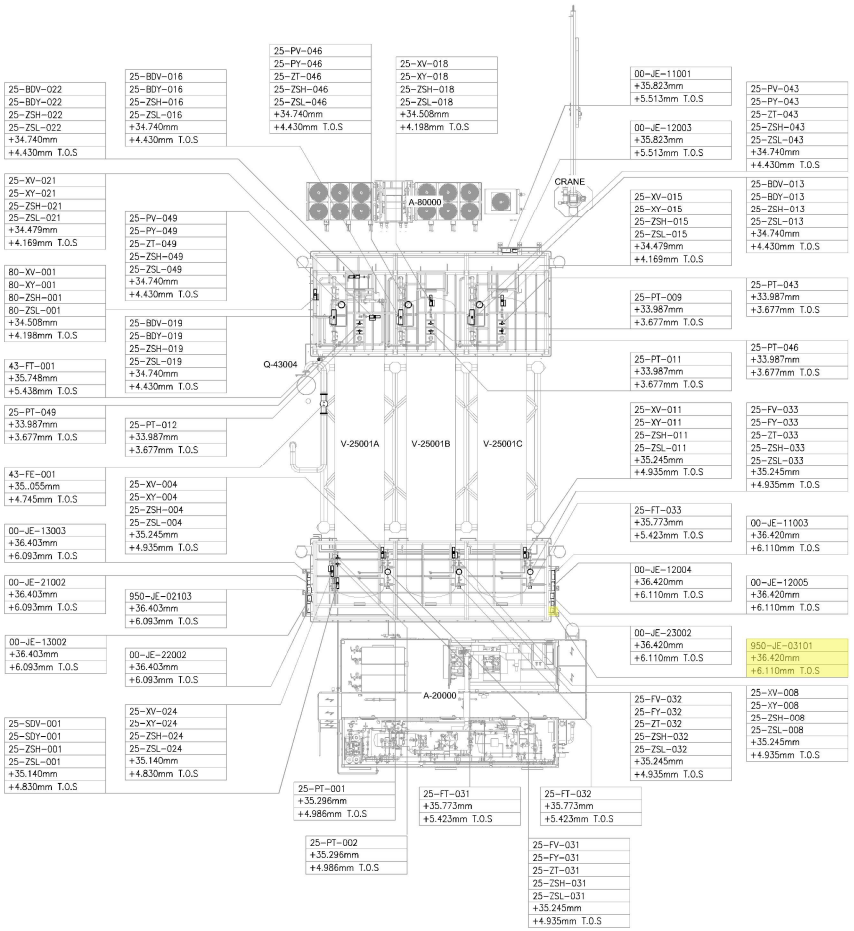
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

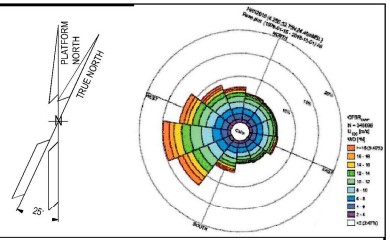
REV. 02



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD

INSTRUMENTS

<01>

950-GDZ-03101	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03102	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03103	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03104	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03105	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03107	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03108	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03109	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2

PWR+ / 4-20mA / PWR- — RD / WH / BK

JUNCTION BOX

950-JE-03101

TB-1

1	RD	
2	WH	TR1
3	BK	
SH		
4	RD	
5	WH	TR2
6	BK	
SH		
7	RD	
8	WH	TR3
9	BK	
SH		
10	RD	
11	WH	TR4
12	BK	
SH		
13	RD	
14	WH	TR5
15	BK	
SH		
16	RD	
17	WH	TR6
18	BK	
SH		
19	RD	
20	WH	TR7
21	BK	
SH		
22	RD	
23	WH	TR8
24	BK	
SH		
SPARE 25	RD	
26	WH	TR9
27	BK	
SH		
SPARE 28	RD	
29	WH	TR10
30	BK	
SH		
SPARE 31	RD	
32	WH	TR11
33	BK	
SH		
SPARE 34	RD	
35	WH	TR12
36	BK	
SH		
OS		

MULTICABLE No.

950-JE-03101/B400-FGS-003

~~950-JE-03101/B400-FGS-002~~

12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

TB-950-JE-03101

TR1	1 RD	
	2 WH	950-GDZ-03101
Shield Bar	3 BK	
TR2	4 RD	
	5 WH	950-GDZ-03102
Shield Bar	6 BK	
TR3	7 RD	
	8 WH	950-GDZ-03103
Shield Bar	9 BK	
TR4	10 RD	
	11 WH	950-GDZ-03104
Shield Bar	12 BK	
TR5	13 RD	
	14 WH	950-GDZ-03105
Shield Bar	15 BK	
TR6	16 RD	
	17 WH	950-GDZ-03107
Shield Bar	18 BK	
TR7	19 RD	
	20 WH	950-GDZ-03108
Shield Bar	21 BK	
TR8	22 RD	
	23 WH	950-GDZ-03109
Shield Bar	24 BK	
TR9	25 RD	
	26 WH	SPARE
Shield Bar	27 BK	
TR10	28 RD	
	29 WH	SPARE
Shield Bar	30 BK	
TR11	31 RD	
	32 WH	SPARE
Shield Bar	33 BK	
TR12	34 RD	
	35 WH	SPARE
	~~36 BK~~	

Shield Bar — I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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 036	REV. 01

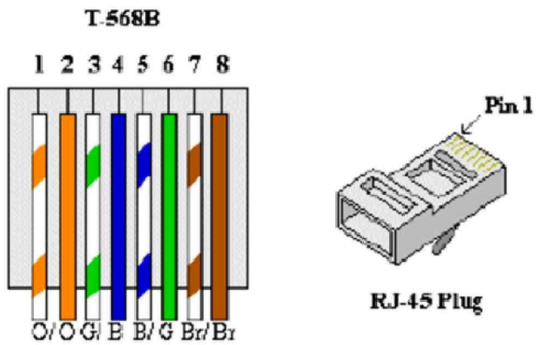
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DRAWING NO. 123A90-DDL-IN-DG-40015

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:



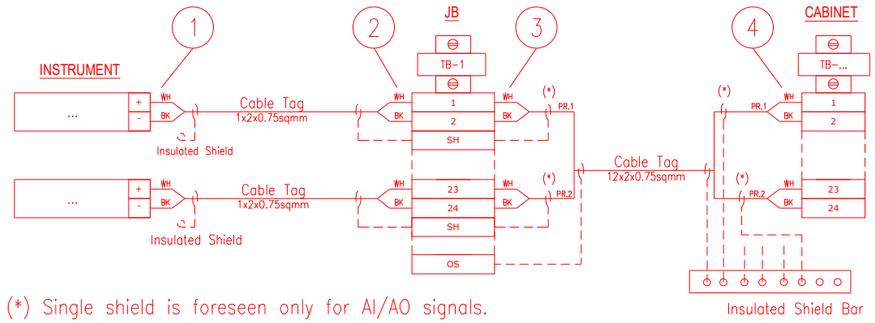
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

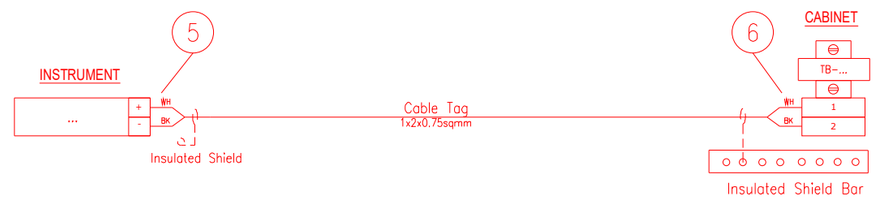
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY 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:

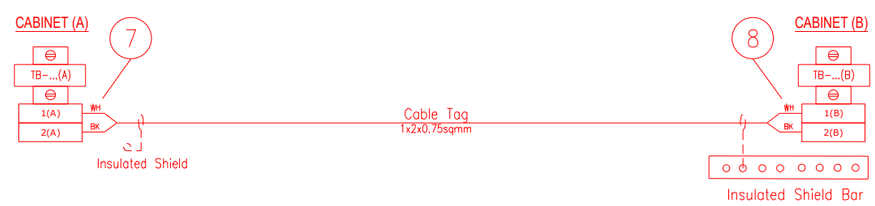
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



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_N	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

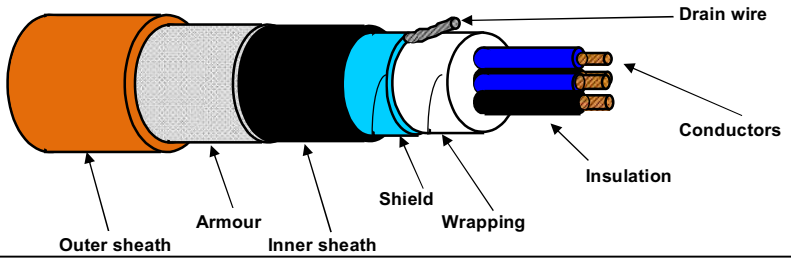
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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-950-GDZ-03109/950-JE-03101	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-GDZ-03109	Gas Detector	Upper Deck		950-JE-03101	AI JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of 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-950-MFA-03101/950-JE-03103	: MANUAL FIRE ALARM / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10000297	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	950-MFA-03101	To	950-JE-03103		

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.	PL
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.	OK
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		0,6	Ω
	SCREEN		0,6	Ω
	EARTH		NA	Ω
	ARMr		0,6	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

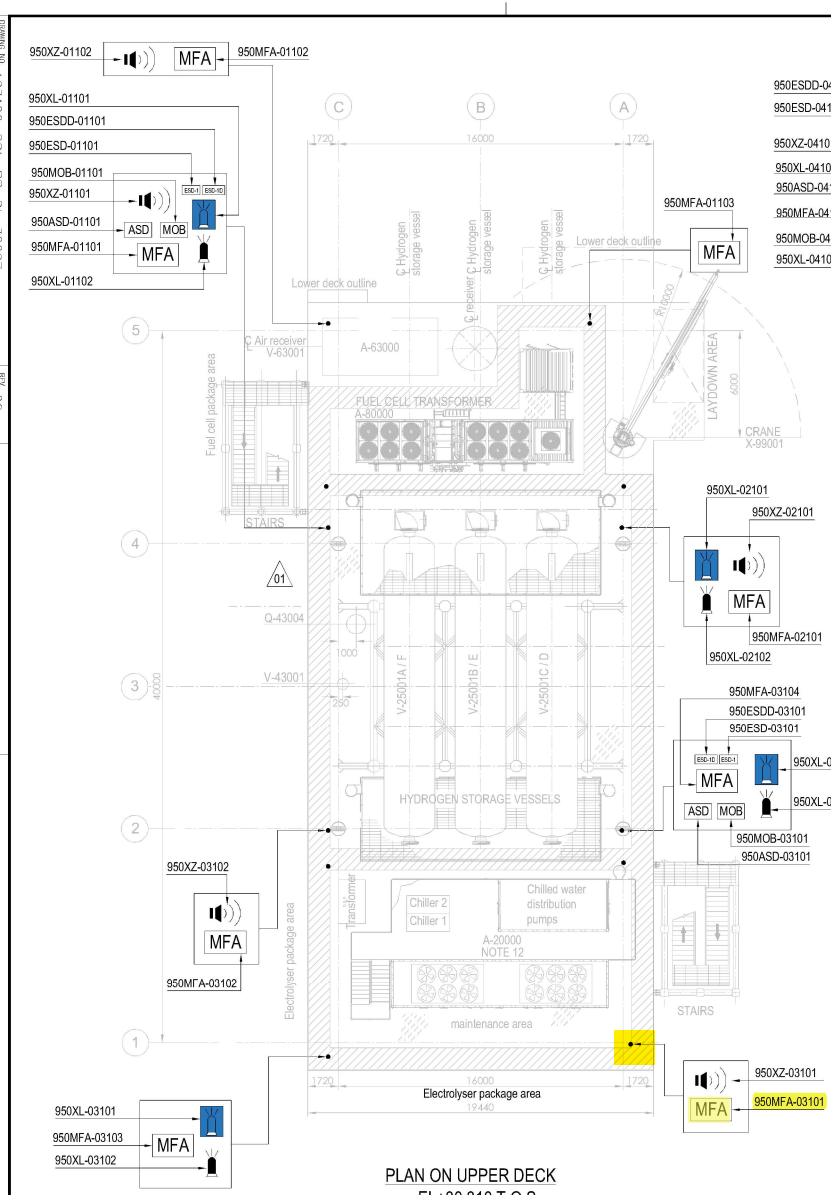
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-11-27	2024-12-05	
Signature	Digitaly signed by Francesco Zucca 2024-11-27T14:18:15.573Z	Digitaly signed by Giovanni Tangianu 2024-12-05T15:49:48.614Z	

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02



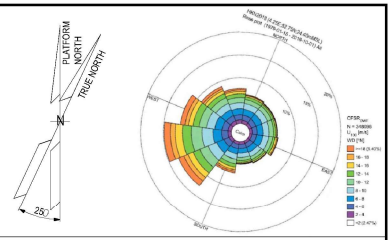
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

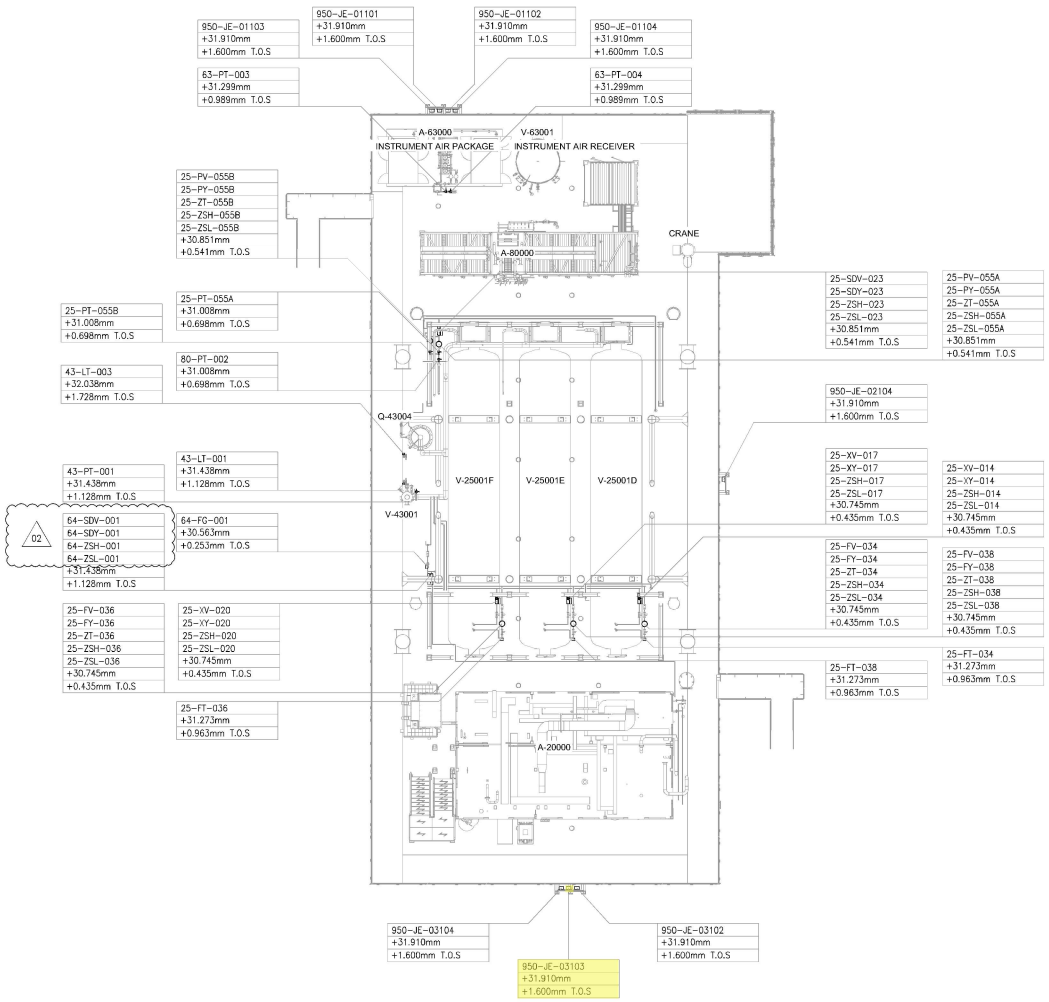
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

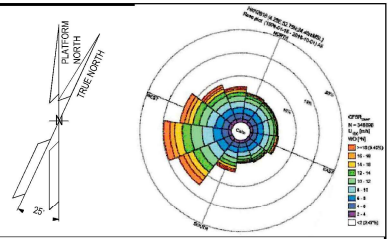
REV. 01



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03103	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

950-MFA-03101 (1, 8) WH, BK — NOTE-2
C-950-MFA-03101/950-JE-03103
~~C-950-MFA-03101/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03102 (1, 8) WH, BK — NOTE-2
C-950-MFA-03102/950-JE-03103
~~C-950-MFA-03102/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03103 (1, 8) WH, BK — NOTE-2
C-950-MFA-03103/950-JE-03103
~~C-950-MFA-03103/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03104 (1, 8) WH, BK — NOTE-2
C-950-MFA-03104/950-JE-03103
~~C-950-MFA-03104/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

WH/BK	1	WH/BK — PR1
	2	
	SH	
WH/BK	3	WH/BK — PR2
	4	
	SH	
WH/BK	5	WH/BK — PR3
	6	
	SH	
WH/BK	7	WH/BK — PR4
	8	
	SH	
SPARE	9	WH/BK — PR5
	10	
	SH	
SPARE	11	WH/BK — PR6
	12	
	SH	
	OS	

950-JE-03103/B400-FGS-003
~~950-JE-03103/B400-FGS-002~~
6x2x0.75mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03103

PR1 — Shield Bar	WH/BK 1	950-MFA-03101
	2	
PR2 — Shield Bar	WH/BK 3	950-MFA-03102
	4	
PR3 — Shield Bar	WH/BK 5	950-MFA-03103
	6	
PR4 — Shield Bar	WH/BK 7	950-MFA-03104
	8	
PR5 — Shield Bar	WH/BK 9	SPARE
	10	
PR6 — Shield Bar	WH/BK 11	SPARE
	12	

Shield Bar — I.E.

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03103

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

	DRAWING NO.	SHEET	REV.
A3	123A90–DDL–IN–DG–40016	038	01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

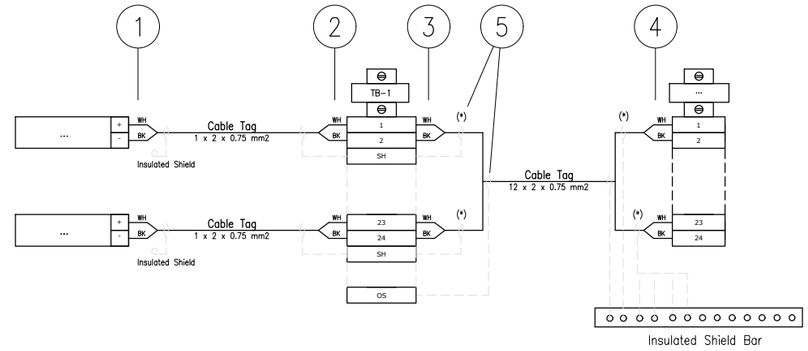
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

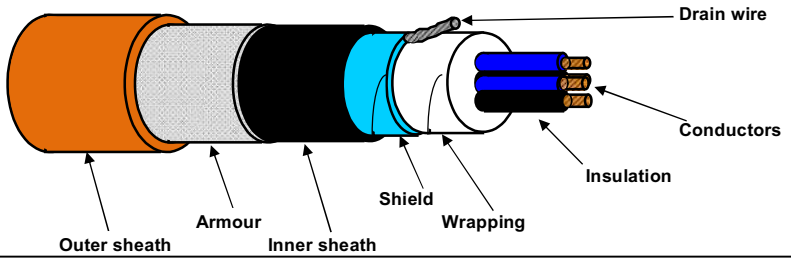
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-MFA-03101/950-JE-03103	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-MFA-03101	Manual Fire Alarm	Upper Deck		950-JE-03103	DI JB to FGS	Upper Deck	Junction Box	SMICV08-1X2X0,75	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Orange	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-20L

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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ROSETTI MARINO — PROVERLIS — CROSSWIND

ITEM	Tag	C-950-MFA-03102/950-JE-03103 : MANUAL FIRE ALARM / MARSHALLING PCS			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)			Module	UD	
TASK	code	C10000298	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	950-MFA-03102	To	950-JE-03103		

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.	PL
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.	PL
9	Check cable labelling is in accordance with specification.	PL
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		0.5	Ω
	SCREEN		0.5	Ω
	EARTH		NA	Ω
	ARMr		0.5	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

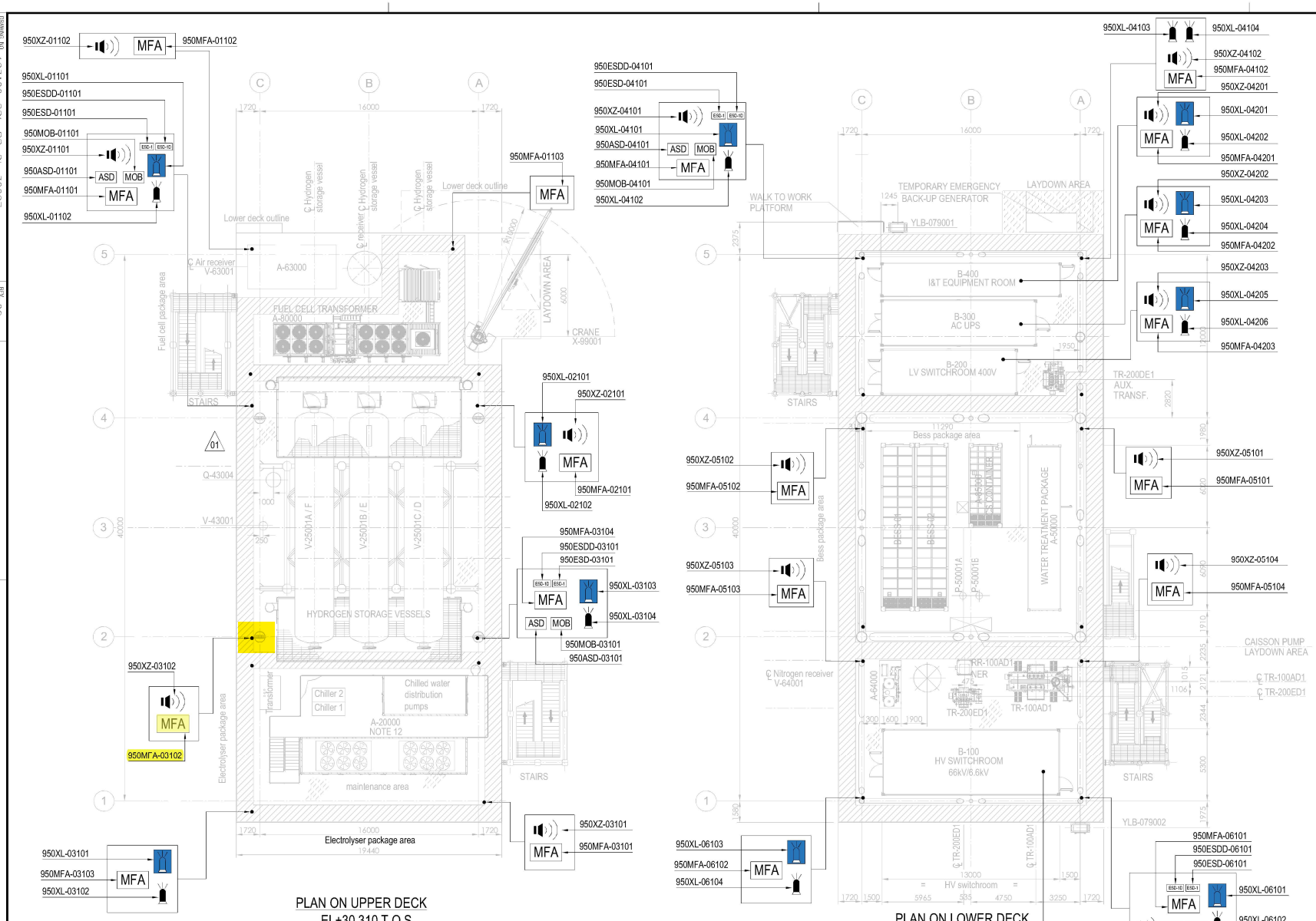
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Paolo Schintu	
Date	2024-11-27	2024-12-10	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-27T14:18:34.929Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-12-10T18:44:22.709Z	



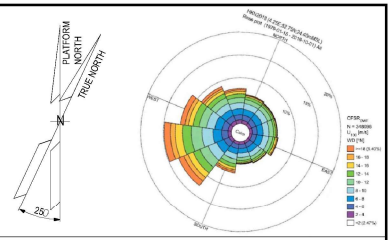
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

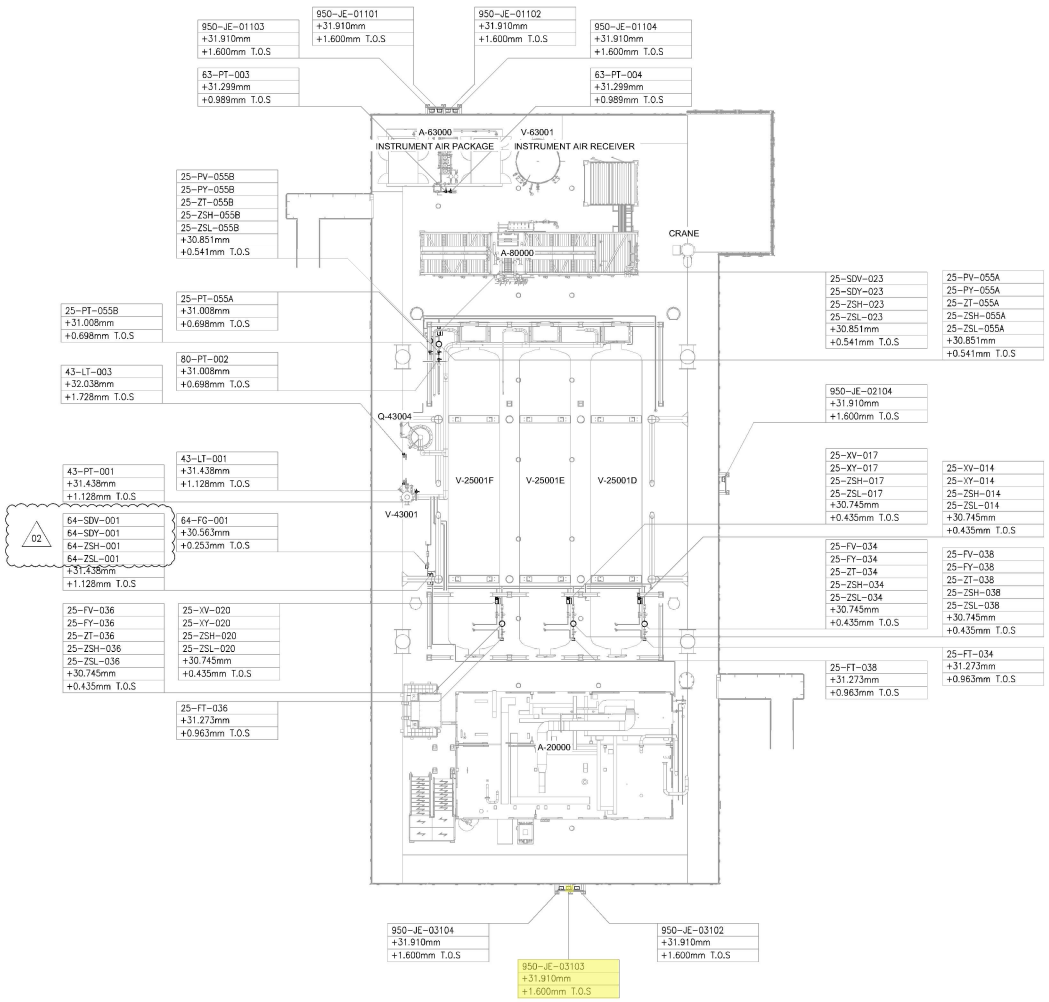
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027		SHEET 002 / REV. 02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

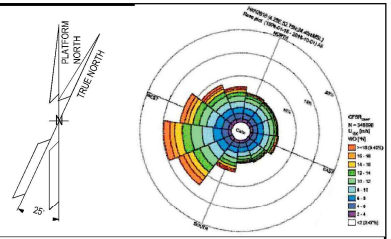
REV. 01



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03103	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

950-MFA-03101 (1, 8) WH, BK — NOTE-2
C-950-MFA-03101/950-JE-03103
~~C-950-MFA-03101/950-JE-031003~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03102 (1, 8) WH, BK — NOTE-2
C-950-MFA-03102/950-JE-03103
~~C-950-MFA-03102/950-JE-031003~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03103 (1, 8) WH, BK — NOTE-2
C-950-MFA-03103/950-JE-03103
~~C-950-MFA-03103/950-JE-031003~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03104 (1, 8) WH, BK — NOTE-2
C-950-MFA-03104/950-JE-03103
~~C-950-MFA-03104/950-JE-031003~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

WH, BK	1	PR1
	2	
	SH	
WH, BK	3	PR2
	4	
	SH	
WH, BK	5	PR3
	6	
	SH	
WH, BK	7	PR4
	8	
	SH	
SPARE	9	PR5
	10	
	SH	
SPARE	11	PR6
	12	
	SH	
	OS	

950-JE-03103/B400-FGS-003
~~950-JE-03103/B400-FGS-002~~
6x2x0.75mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03103

PR1	1	950-MFA-03101
Shield Bar	2	
PR2	3	950-MFA-03102
Shield Bar	4	
PR3	5	950-MFA-03103
Shield Bar	6	
PR4	7	950-MFA-03104
Shield Bar	8	
PR5	9	SPARE
Shield Bar	10	
PR6	11	SPARE
	12	

Shield Bar — I.E.

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03103

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

	DRAWING NO.	SHEET	REV.
A3	123A90–DDL–IN–DG–40016	038	01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

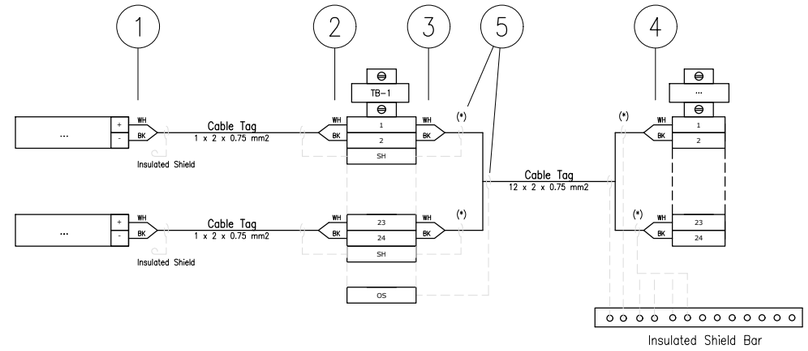
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

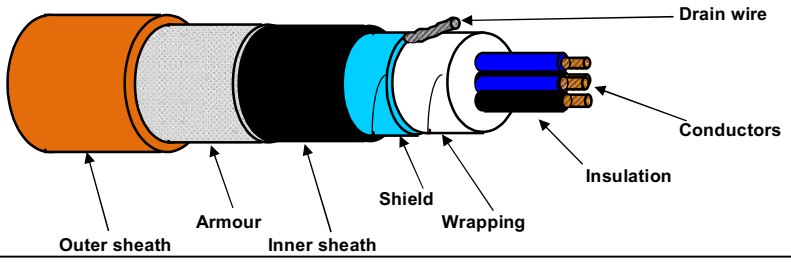
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-MFA-03102/950-JE-03103	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-MFA-03102	Manual Fire Alarm	Upper Deck		950-JE-03103	DI JB to FGS	Upper Deck	Junction Box	SMICV08-1X2X0,75	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Orange	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-20N / U-SEC-20M

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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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-950-MFA-03103/950-JE-03103 : MANUAL FIRE ALARM / MARSHALLING PCS			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)			Module	UD	
TASK	code	C10000299	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	950-MFA-03103	To	950-JE-03103		

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.	OK
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		0,6	Ω
	SCREEN		0,6	Ω
	EARTH		NA	Ω
	ARMr		0,6	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

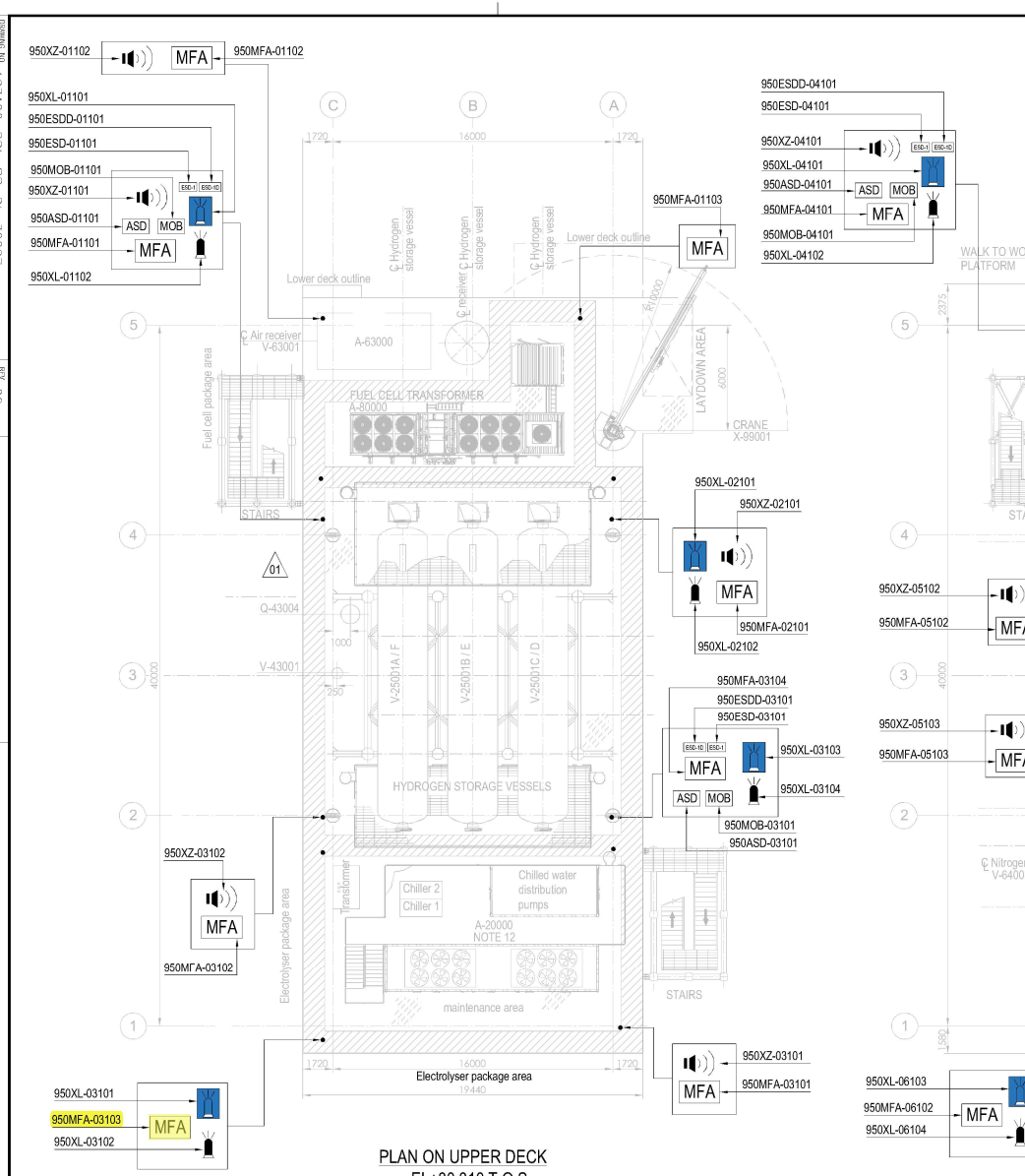
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-22	2024-12-05	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:14:37.983Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-05T15:52:14.594Z	



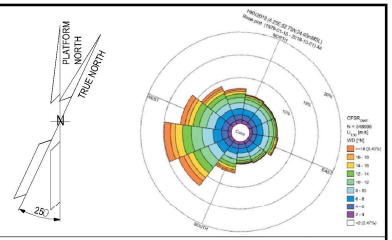
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

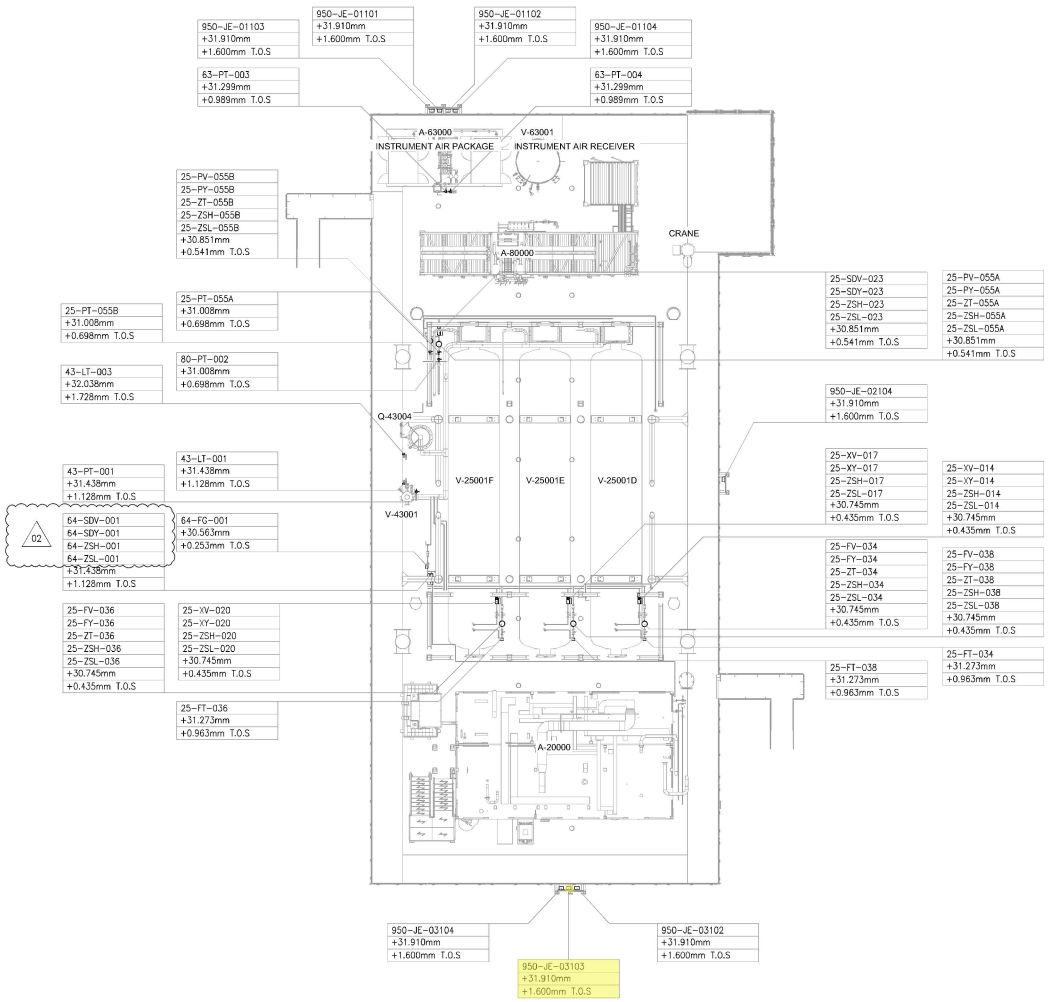
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

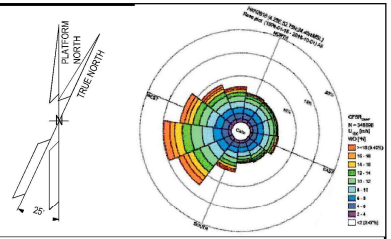
REV. 01



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03103	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

950-MFA-03101 (1 / 8) WH / BK — NOTE-2
C-950-MFA-03101/950-JE-03103
~~C-950-MFA-03101/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03102 (1 / 8) WH / BK — NOTE-2
C-950-MFA-03102/950-JE-03103
~~C-950-MFA-03102/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03103 (1 / 8) WH / BK — NOTE-2
C-950-MFA-03103/950-JE-03103
~~C-950-MFA-03103/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03104 (1 / 8) WH / BK — NOTE-2
C-950-MFA-03104/950-JE-03103
~~C-950-MFA-03104/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

WH / BK	1	WH / BK — PR1
	2	
	SH	
WH / BK	3	WH / BK — PR2
	4	
	SH	
WH / BK	5	WH / BK — PR3
	6	
	SH	
WH / BK	7	WH / BK — PR4
	8	
	SH	
SPARE	9	WH / BK — PR5
	10	
	SH	
SPARE	11	WH / BK — PR6
	12	
	SH	
	OS	

950-JE-03103/B400-FGS-003
~~950-JE-03103/B400-FGS-002~~
6x2x0.75mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03103

PR1 — Shield Bar	1	WH / BK — 950-MFA-03101
	2	
PR2 — Shield Bar	3	WH / BK — 950-MFA-03102
	4	
PR3 — Shield Bar	5	WH / BK — 950-MFA-03103
	6	
PR4 — Shield Bar	7	WH / BK — 950-MFA-03104
	8	
PR5 — Shield Bar	9	WH / BK — SPARE
	10	
PR6 — Shield Bar	11	WH / BK — SPARE
	12	

Shield Bar — I.E.

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03103

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 038	REV. 01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

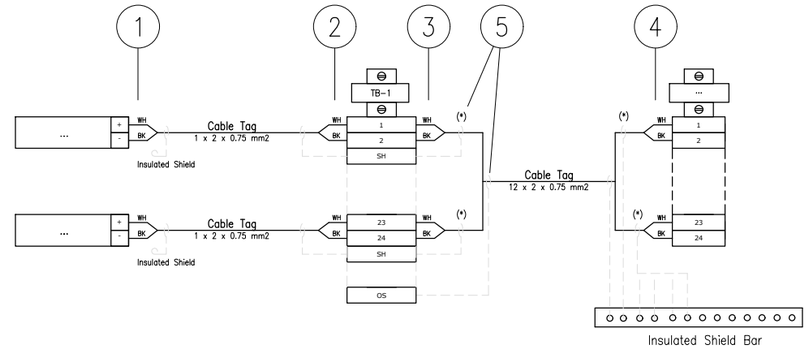
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

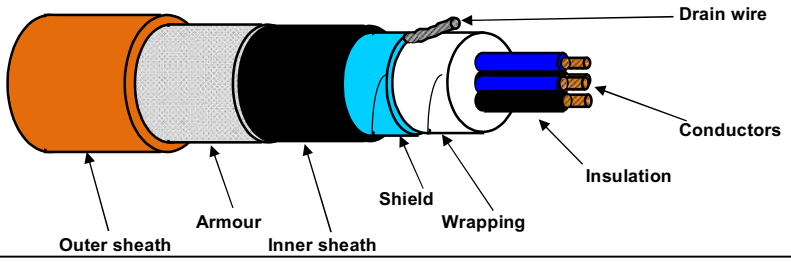
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-MFA-03103/950-JE-03103	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-MFA-03103	Manual Fire Alarm	Upper Deck		950-JE-03103	DI JB to FGS	Upper Deck	Junction Box	SMICV08-1X2X0,75	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Orange	M20S	T2_M20S_Double			T2_M20S_Double				U-SEC-20M

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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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-950-MFA-03104/950-JE-03103 : MANUAL FIRE ALARM / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10000300		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: 950-MFA-03104 | To: 950-JE-03103

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.	PL
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.	PL
9	Check cable labelling is in accordance with specification.	PL
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	0.5	Ω
	SCREEN	0.6	Ω
	EARTH	NA	Ω
	ARMr	0.5	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

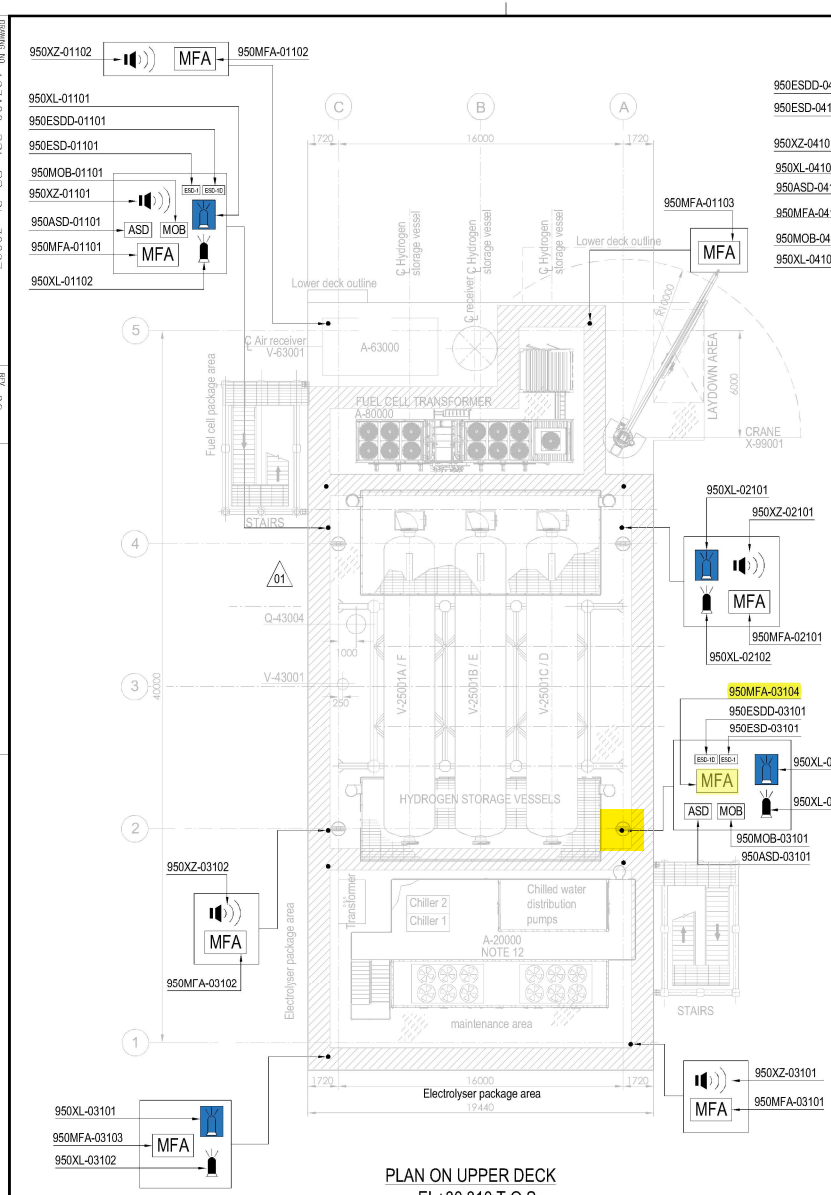
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 | Calibration date: 10/07/2024

Comments: Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Paolo Schintu	
Date	2024-12-02	2024-12-10	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T07:04:47.010Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-12-10T18:47:07.887Z	

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02



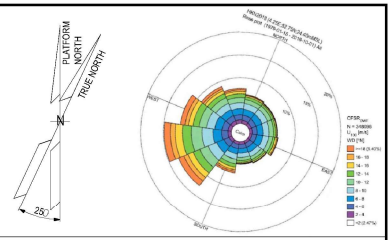
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

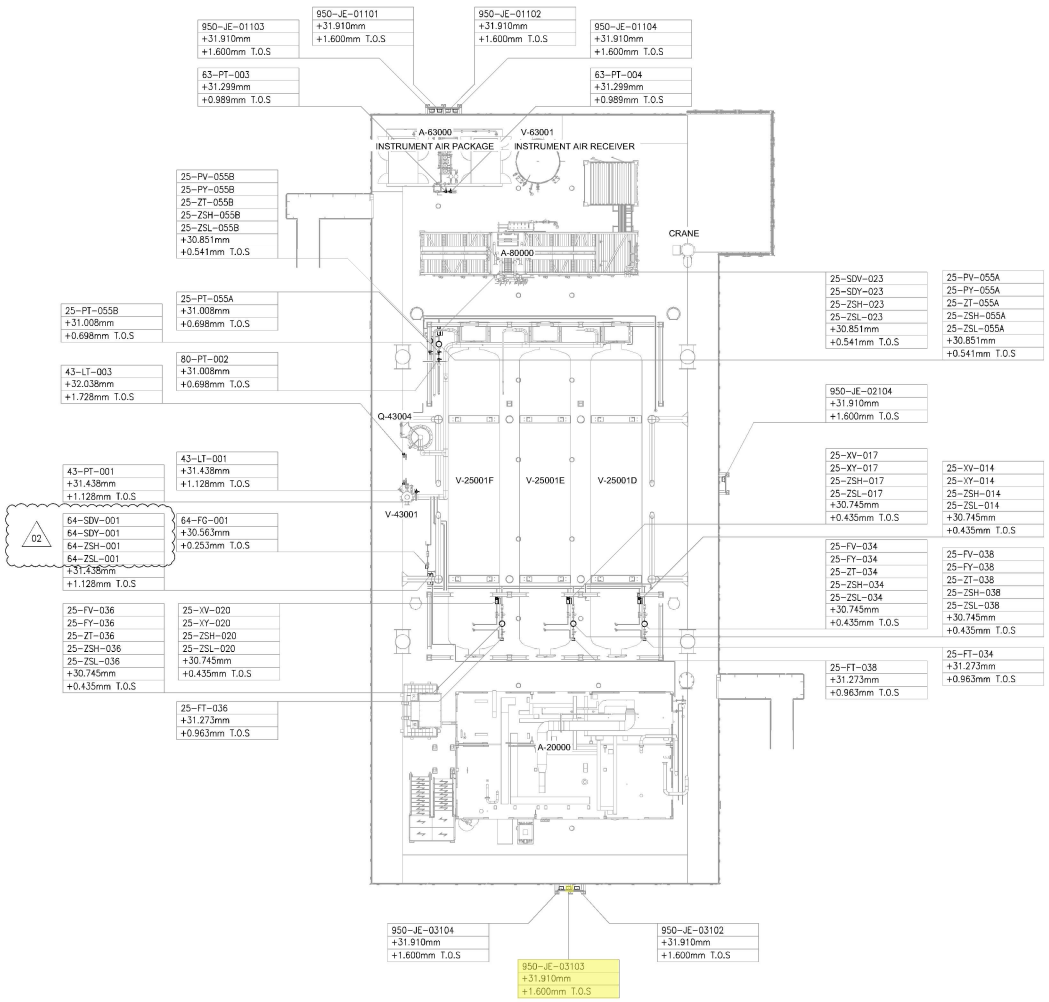
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027		SHEET 002 / REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

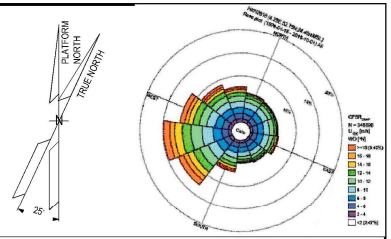
REV. 01



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03103	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

950-MFA-03101 (1 / 8) WH / BK — NOTE-2
C-950-MFA-03101/950-JE-03103
~~C-950-MFA-03101/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03102 (1 / 8) WH / BK — NOTE-2
C-950-MFA-03102/950-JE-03103
~~C-950-MFA-03102/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03103 (1 / 8) WH / BK — NOTE-2
C-950-MFA-03103/950-JE-03103
~~C-950-MFA-03103/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03104 (1 / 8) WH / BK — NOTE-2
C-950-MFA-03104/950-JE-03103
~~C-950-MFA-03104/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

WH / BK	1	WH / BK — PR1
	2	
	SH	
WH / BK	3	WH / BK — PR2
	4	
	SH	
WH / BK	5	WH / BK — PR3
	6	
	SH	
WH / BK	7	WH / BK — PR4
	8	
	SH	
SPARE	9	WH / BK — PR5
	10	
	SH	
SPARE	11	WH / BK — PR6
	12	
	SH	
	OS	

950-JE-03103/B400-FGS-003
~~950-JE-03103/B400-FGS-002~~
6x2x0.75mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03103

PR1	WH / BK	1	950-MFA-03101
		2	
Shield Bar PR2	WH / BK	3	950-MFA-03102
		4	
Shield Bar PR3	WH / BK	5	950-MFA-03103
		6	
Shield Bar PR4	WH / BK	7	950-MFA-03104
		8	
Shield Bar PR5	WH / BK	9	SPARE
		10	
Shield Bar PR6	WH / BK	11	SPARE
		12	

Shield Bar — I.E.

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03103

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

	DRAWING NO.	SHEET	REV.
A3	123A90–DDL–IN–DG–40016	038	01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

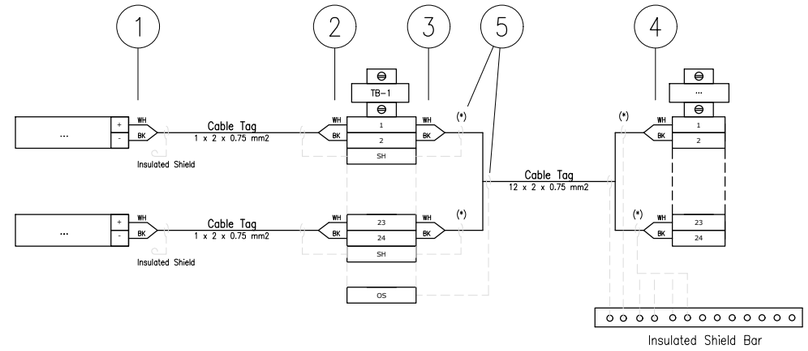
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

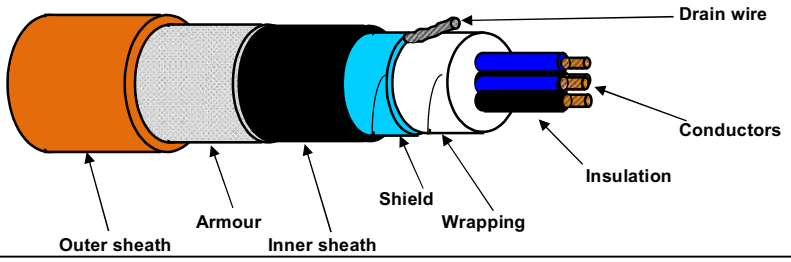
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-MFA-03104/950-JE-03103	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-MFA-03104	Manual Fire Alarm	Upper Deck		950-JE-03103	DI JB to FGS	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-20J / U-SEC-20K / U-SEC-20L

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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ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-950-XZ-03101/950-JE-03104	: SOUNDER / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10000327	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	950-XZ-03101	To	950-JE-03104		

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.	PL
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.	OK
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	0,3	Ω
	SCREEN	0,3	Ω
	EARTH	NA	Ω
	ARMr	0,3	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

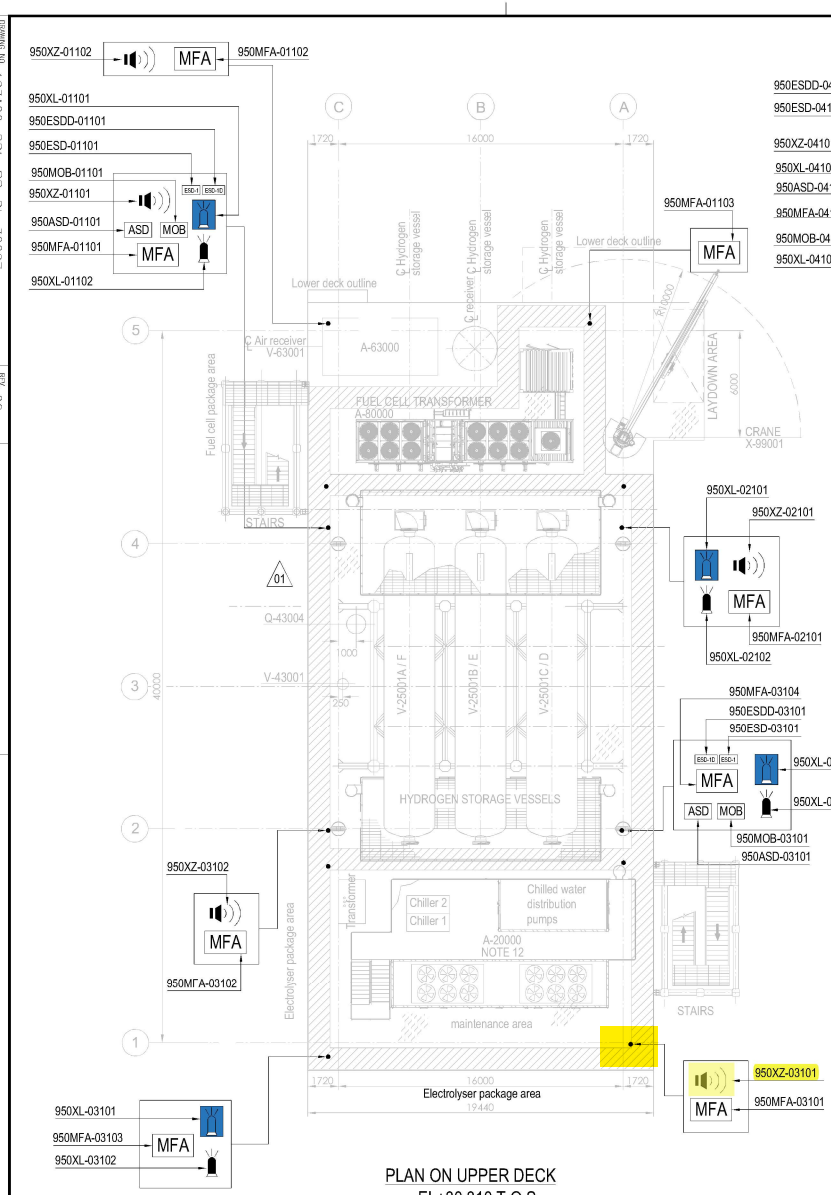
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-22	2024-12-05	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:15:42.379Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-05T14:55:21.899Z	

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02



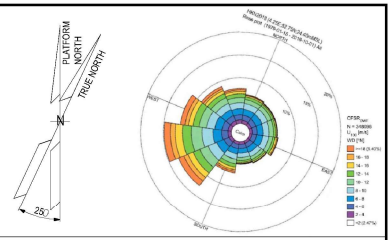
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

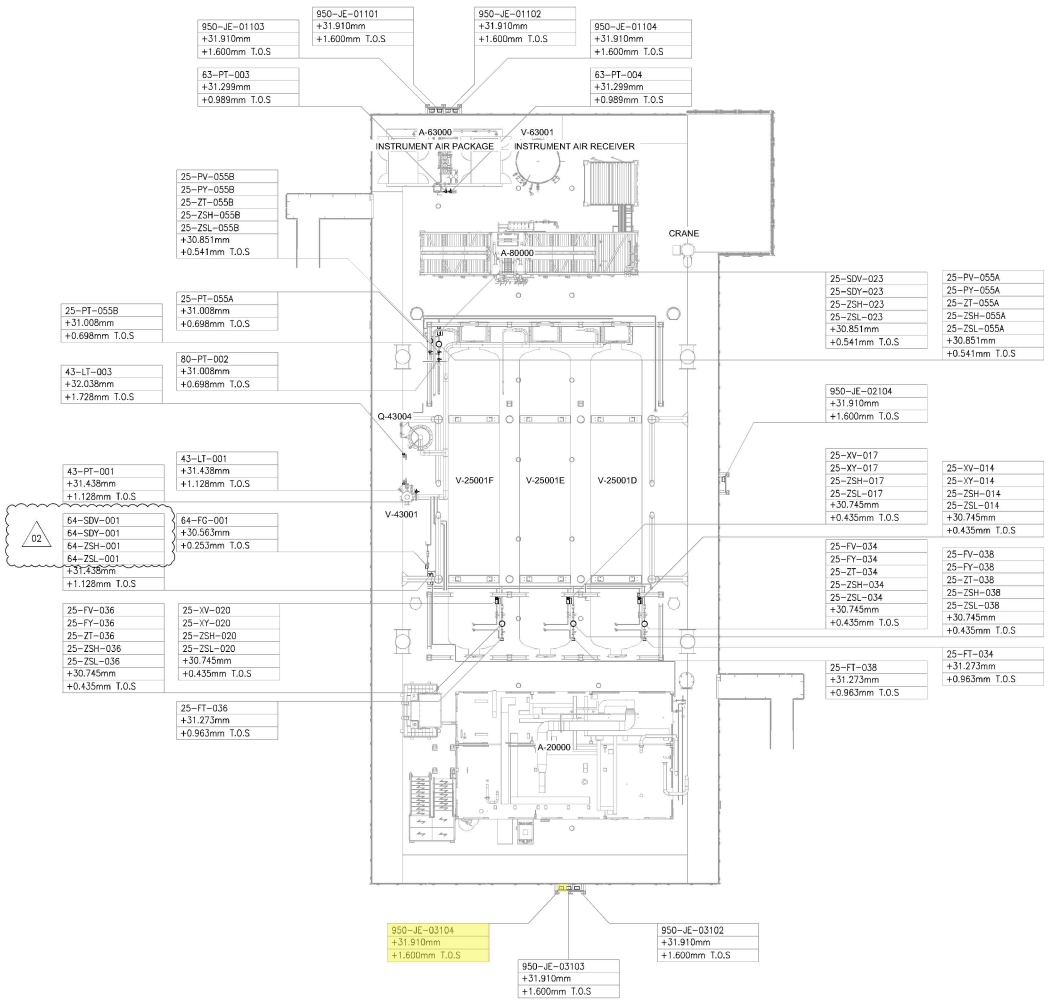
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027		SHEET 002 / REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

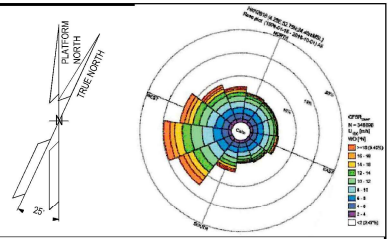
REV. 01



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

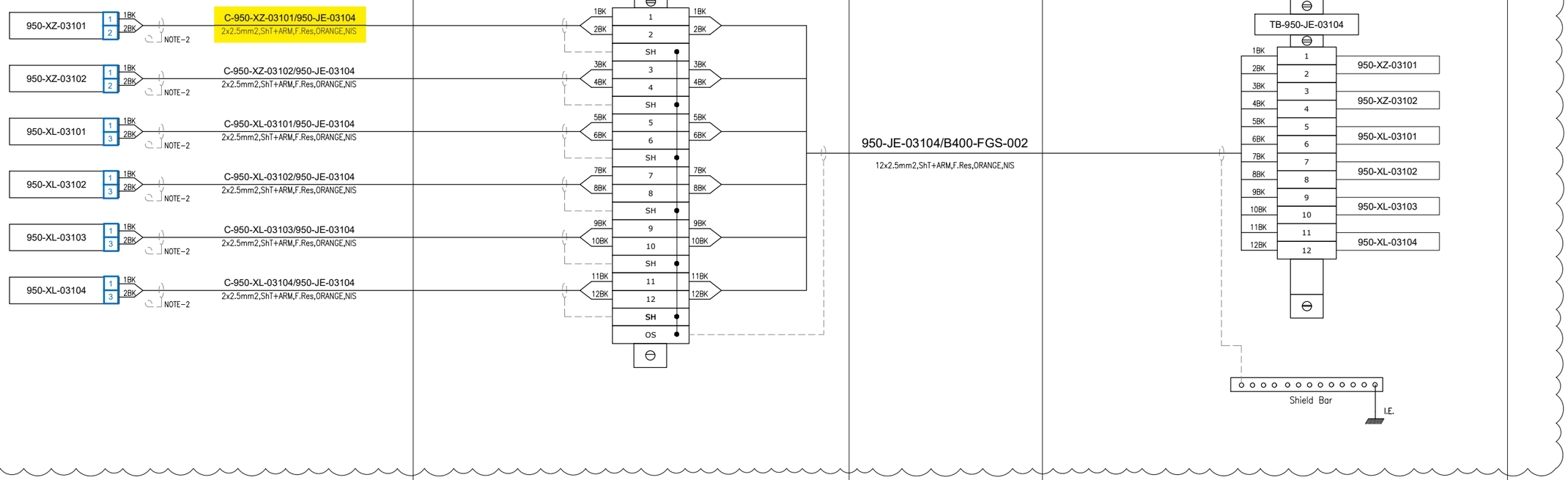
File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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 066	REV. 01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

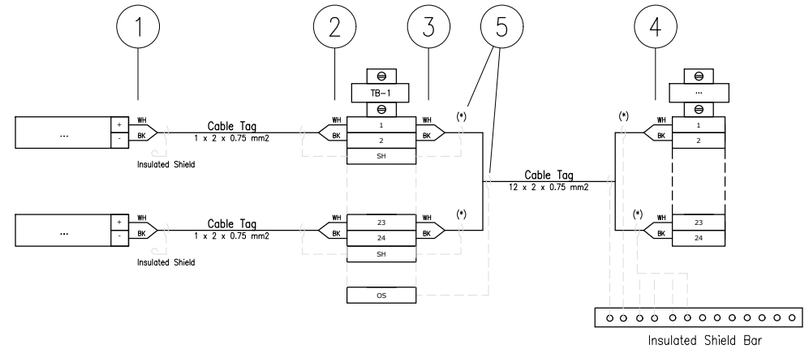
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

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(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

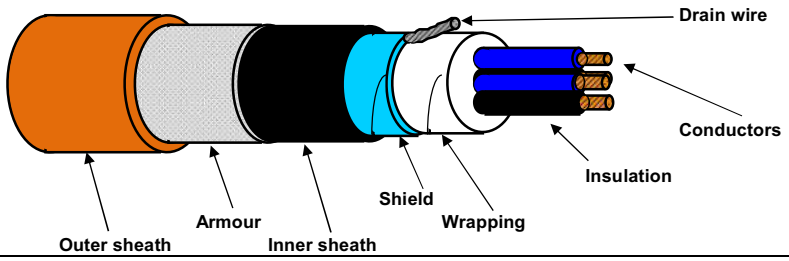
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-XZ-03101/950-JE-03104	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-XZ-03101	Sounder	Upper Deck		950-JE-03104	DO JB to FGS	Upper Deck	Junction Box	SMICVT2-2X2,5	Cable Cu CL2/MGT/XLPE/OS/ILSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Dou ble				U-SEC-20L

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.

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-950-XZ-03102/950-JE-03104	: SOUNDER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10000328		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: 950-XZ-03102 — To: 950-JE-03104

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.	PL
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.	OK
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		0,3	Ω
	SCREEN		0,3	Ω
	EARTH		NA	Ω
	ARMr		0,3	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

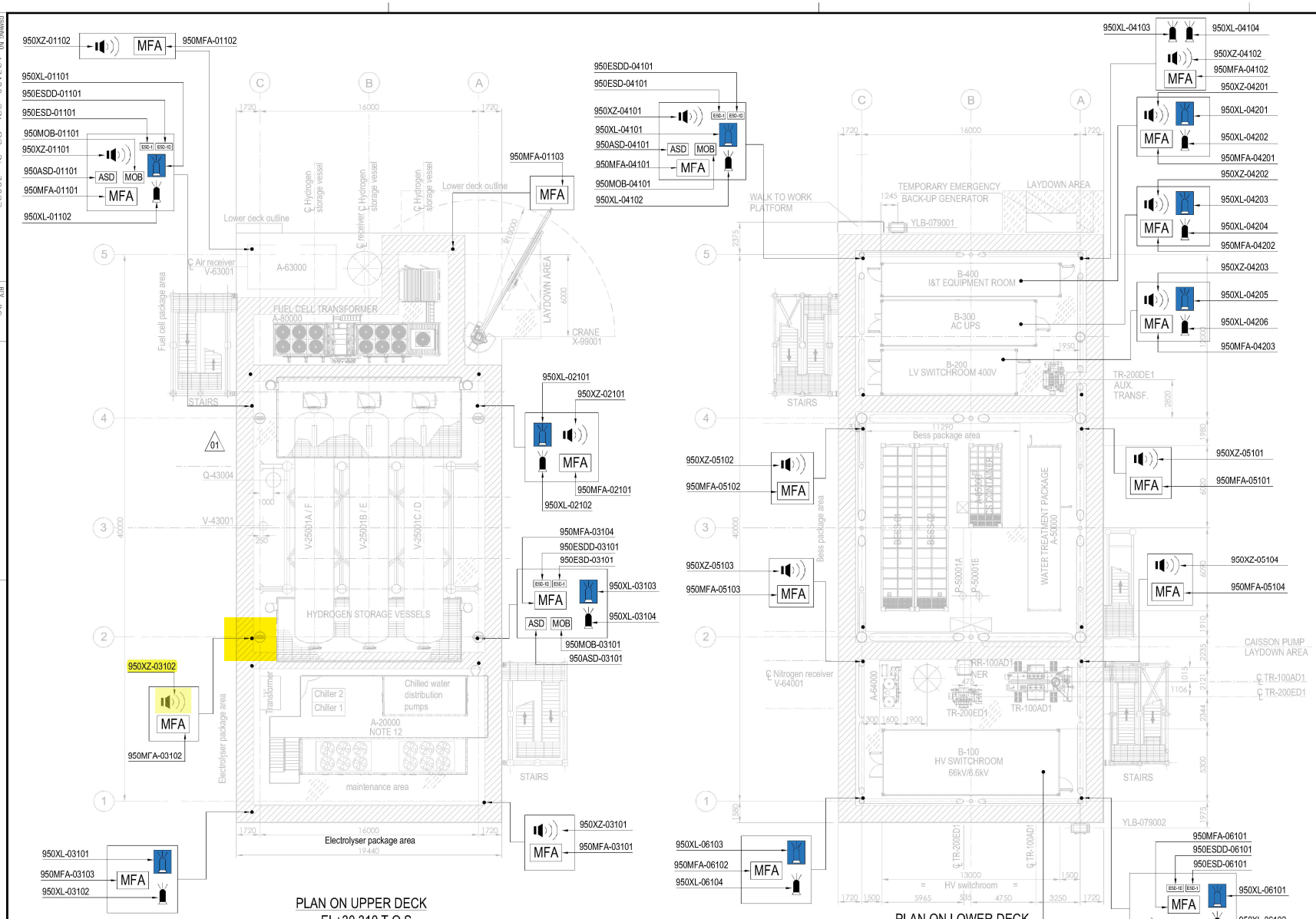
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 — Calibration date: N°7722/24 10/07/2024

Comments: Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Alessio Polo	
Date	2024-11-22	2024-12-11	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:15:53.127Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-11T11:10:35.864Z	

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02



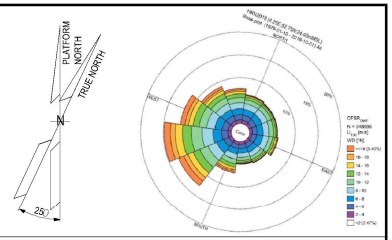
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

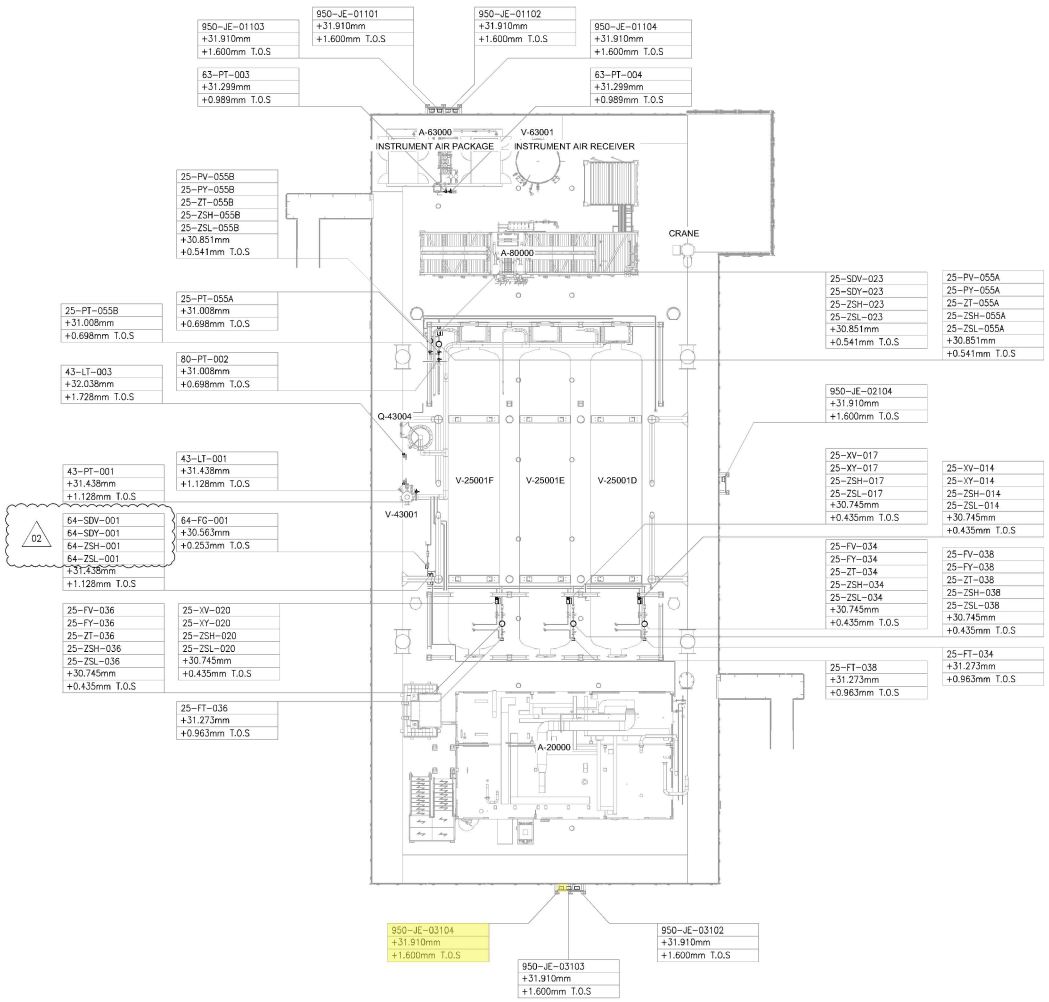
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

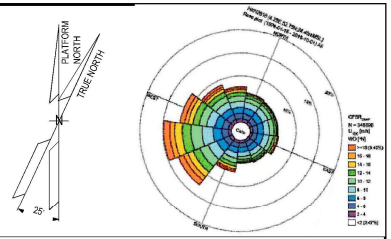
REV. 01



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

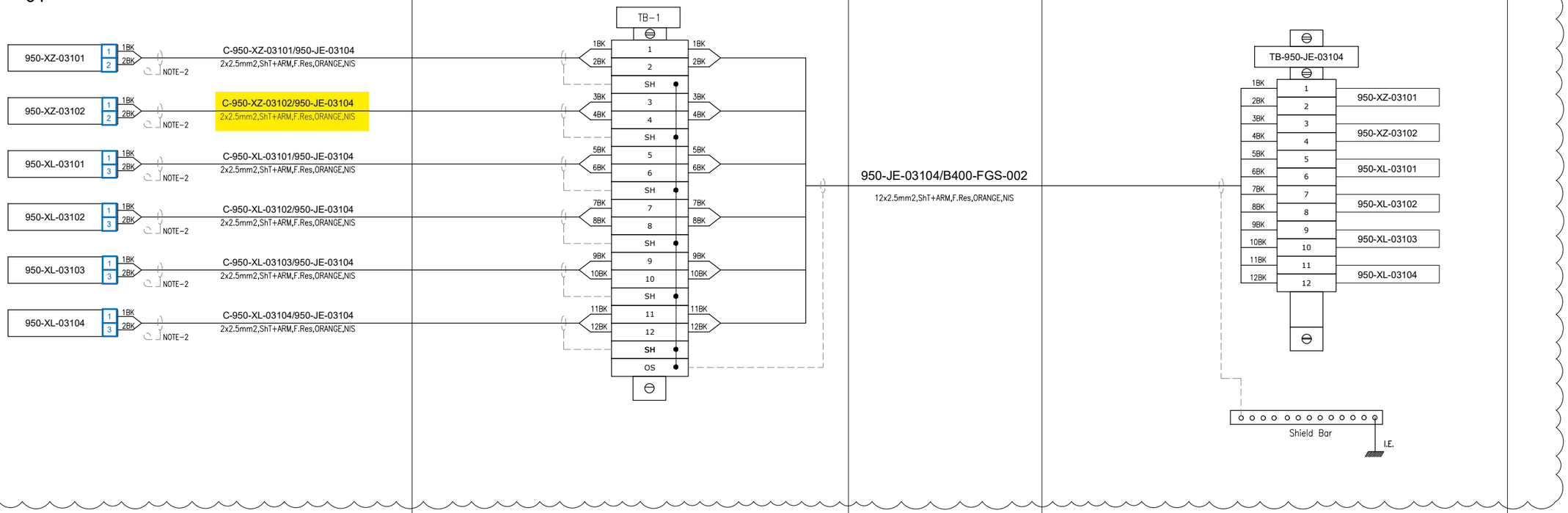
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DRAWING NO. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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 066	REV. 01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

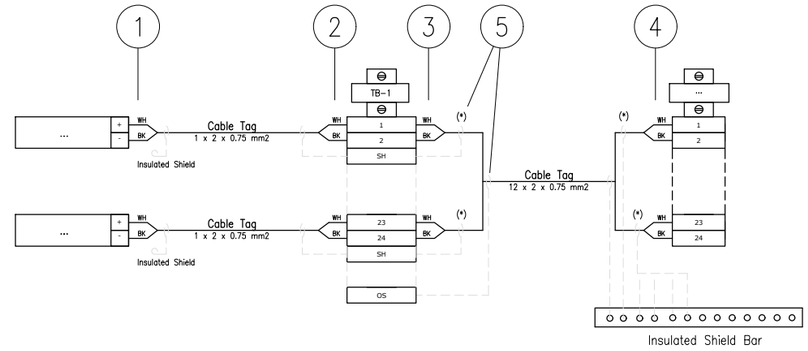
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TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

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REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

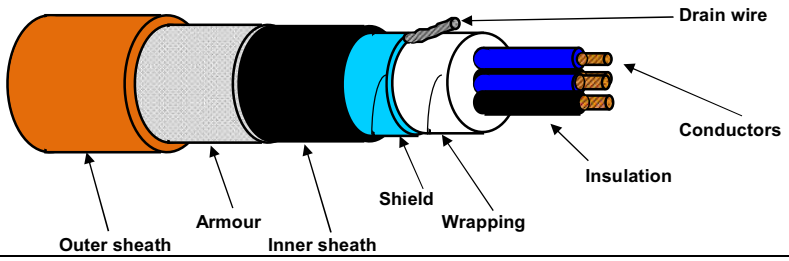
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A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-XZ-03102/950-JE-03104	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-XZ-03102	Sounder	Upper Deck		950-JE-03104	DO JB to FGS	Upper Deck	Junction Box	SMICVT2-2X2,5	Cable Cu CL2/MGT/XLPE/OS/ILSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Dou ble				U-SEC-20N / U-SEC-20M

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	C-950-XL-03101/950-JE-03104 : BEACON / MARSHALLING PCS			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)			Module	UD	
TASK	code	C10000329	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	950-XL-03101	To	950-JE-03104		

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		0,3	Ω
	SCREEN		0,3	Ω
	EARTH		NA	Ω
	ARMr		0,3	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

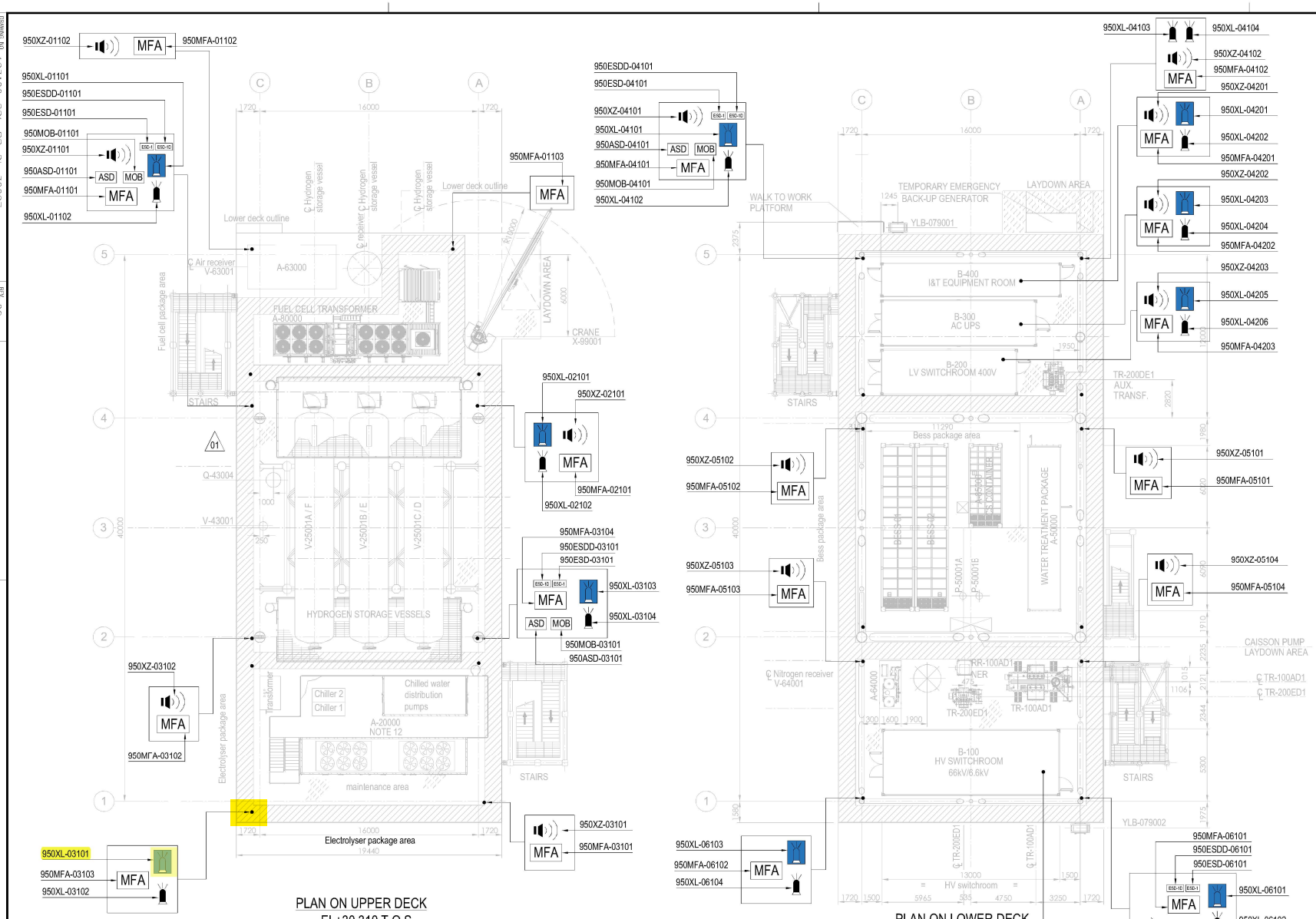
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-02	2024-12-13	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T16:17:34.046Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-13T11:22:17.329Z	



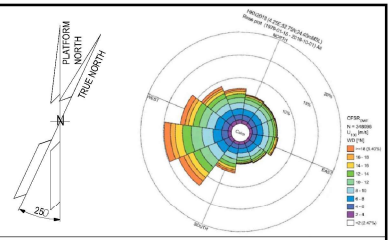
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

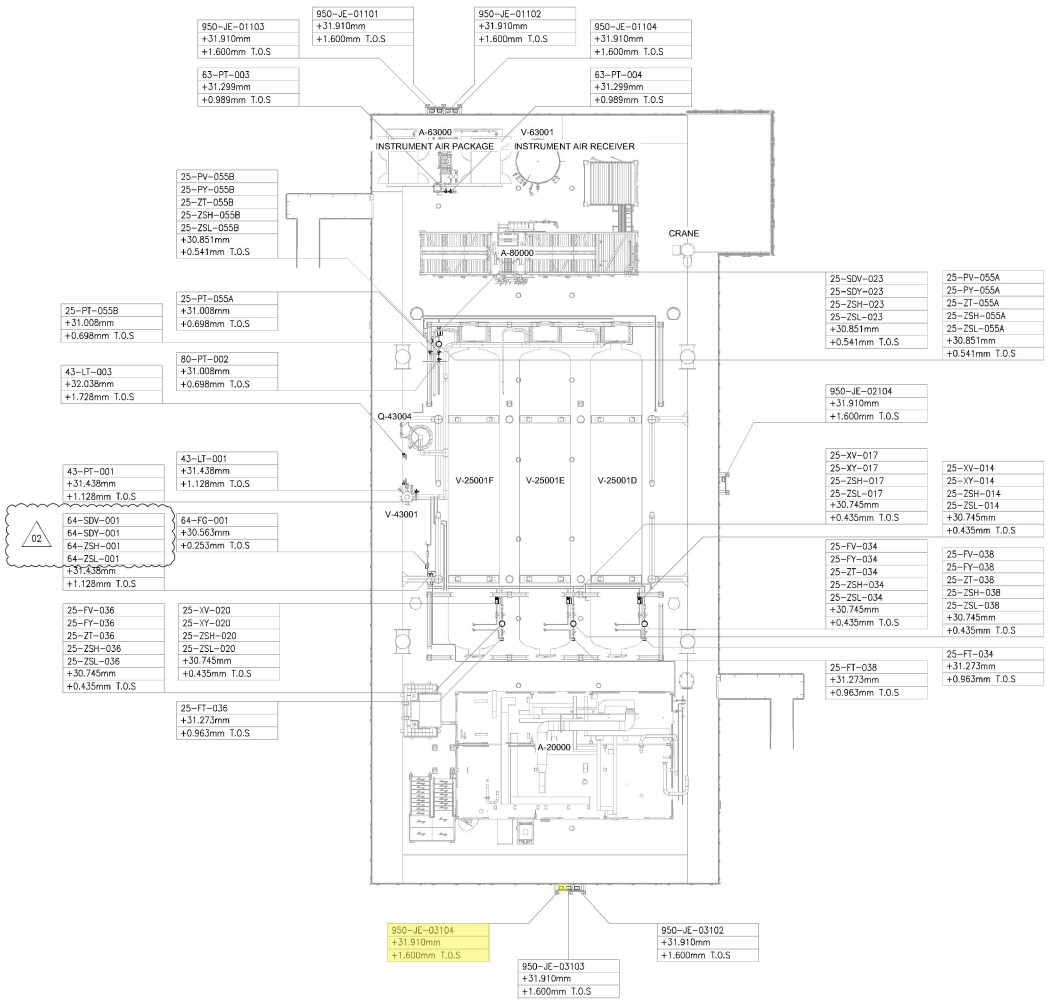
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

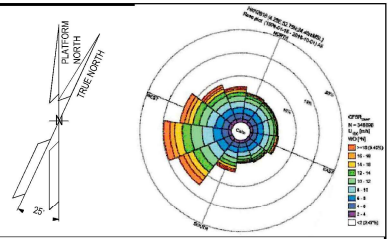
REV. 01



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

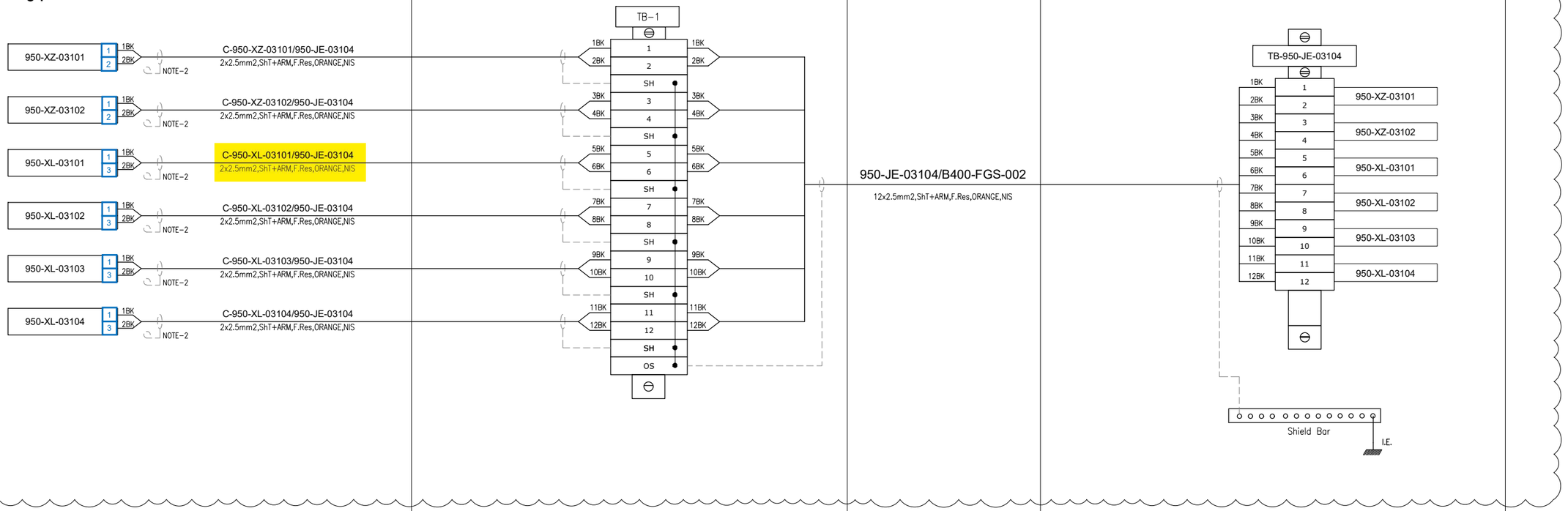
File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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 066	REV. 01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

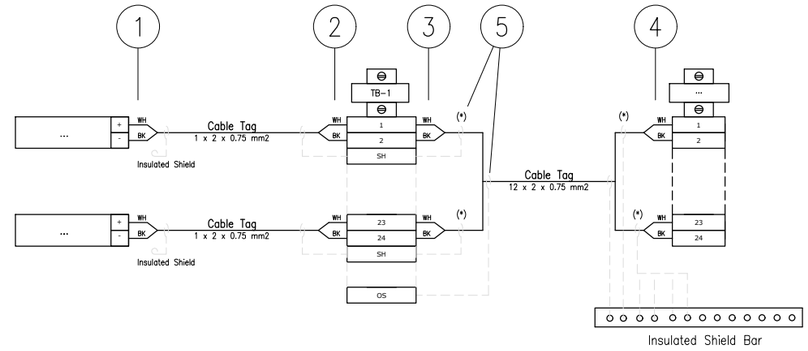
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

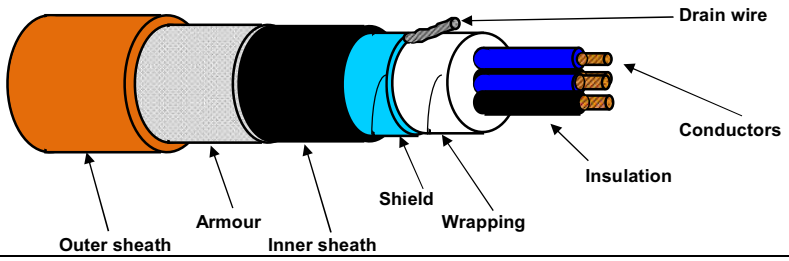
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-XL-03101/950-JE-03104	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-XL-03101	Flash Beacon (Amber)	Upper Deck		950-JE-03104	DO JB to FGS	Upper Deck	Junction Box	SMICVT2-2X2,5	Cable Cu CL2/MGT/XLPE/OS/ILSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Dou ble				U-SEC-20M

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	C-950-XL-03102/950-JE-03104	: BEACON / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10000330	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	950-XL-03102		To	950-JE-03104	

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.	NA
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	0,3	Ω
	SCREEN	0,3	Ω
	EARTH	NA	Ω
	ARMr	0,3	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

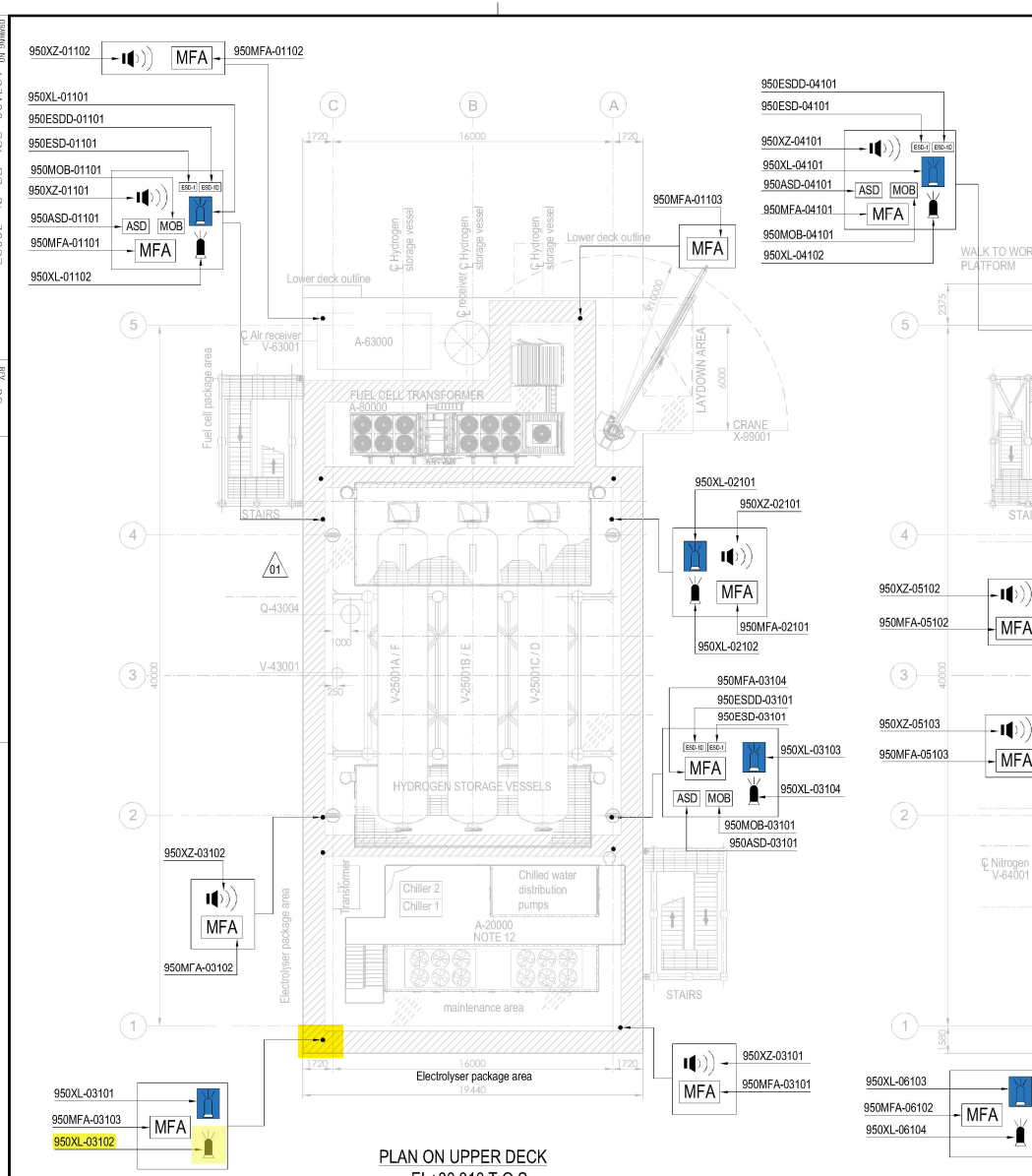
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-02	2024-12-13	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T16:17:46.115Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-13T11:23:10.584Z	



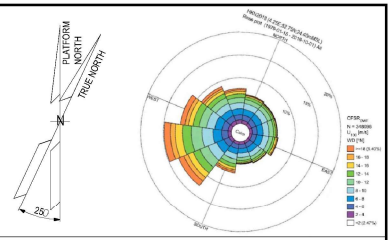
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

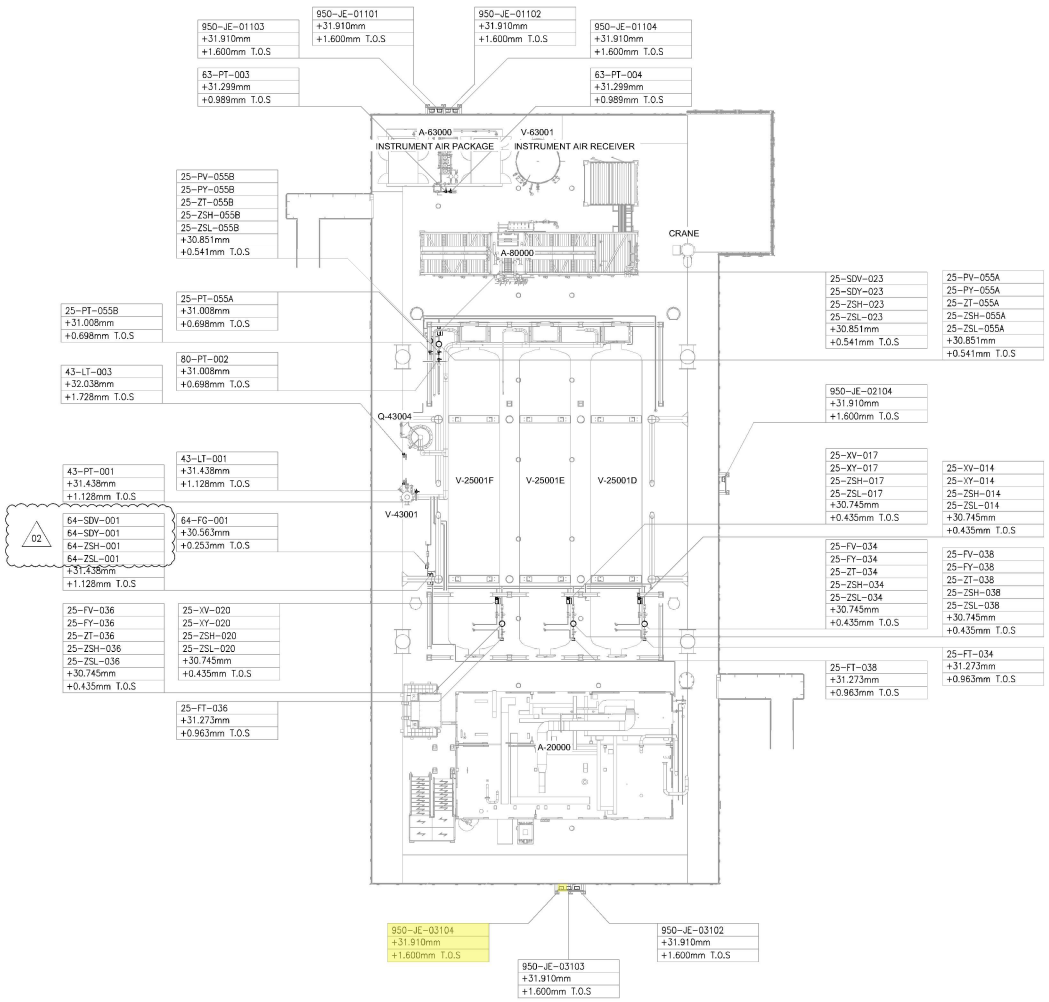
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

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

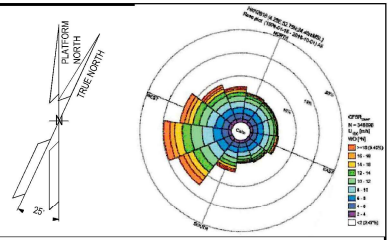
REV. 01



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

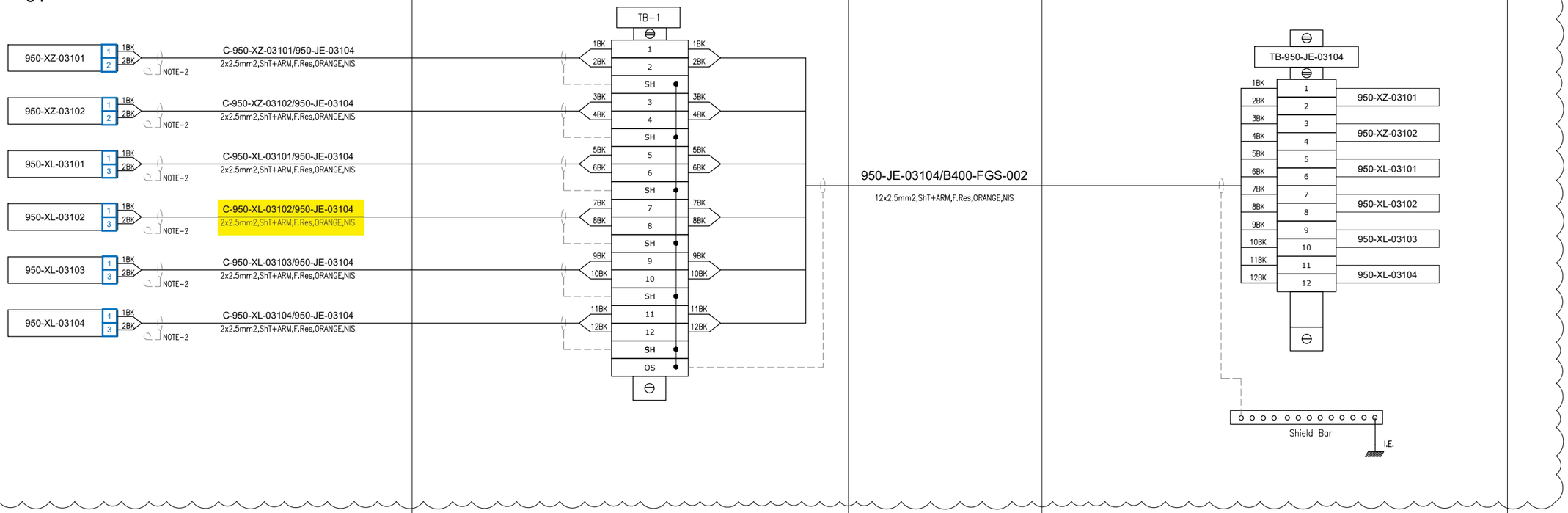
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DRAWING NO. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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 066	REV. 01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

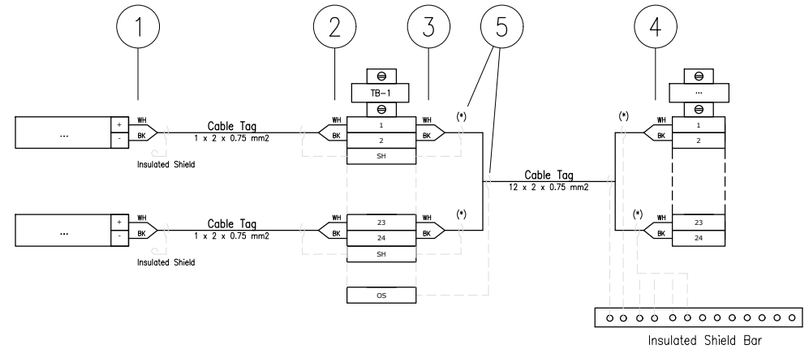
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

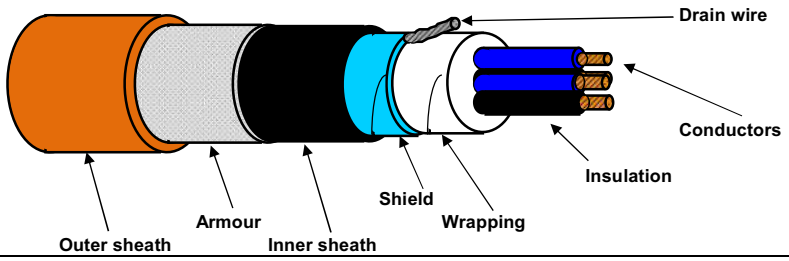
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-XL-03102/950-JE-03104	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-XL-03102	Flash Beacon (Red)	Upper Deck		950-JE-03104	DO JB to FGS	Upper Deck	Junction Box	SMICVT12-2X2,5	Cable Cu CL2/MGT/XLPE/OS/ILSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Dou ble				U-SEC-20M

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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ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-950-XL-03103/950-JE-03104	: BEACON / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10000331	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	950-XL-03103	To	950-JE-03104		

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.	PL
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		0,3	Ω
	SCREEN		0,3	Ω
	EARTH		NA	Ω
	ARMr		0,3	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

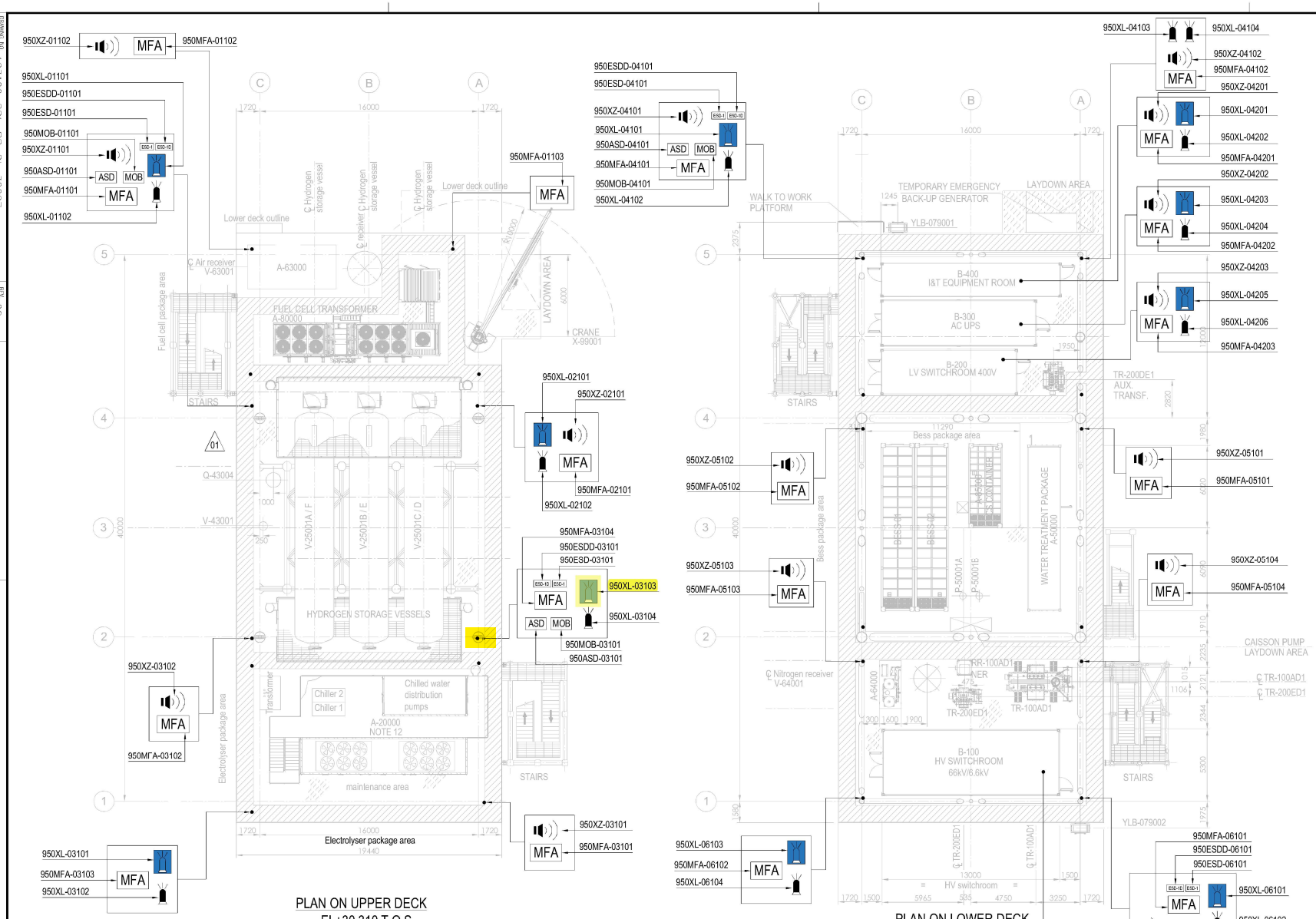
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-02	2024-12-16	
Signature	Digitaly signed by Francesco Zucca 2024-12-02T16:18:02.540Z	Digitaly signed by Alessio Polo 2024-12-16T16:03:39.514Z	



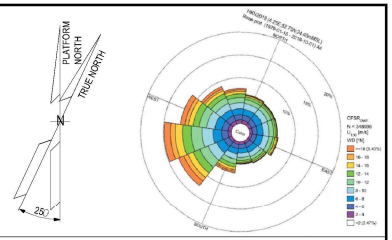
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

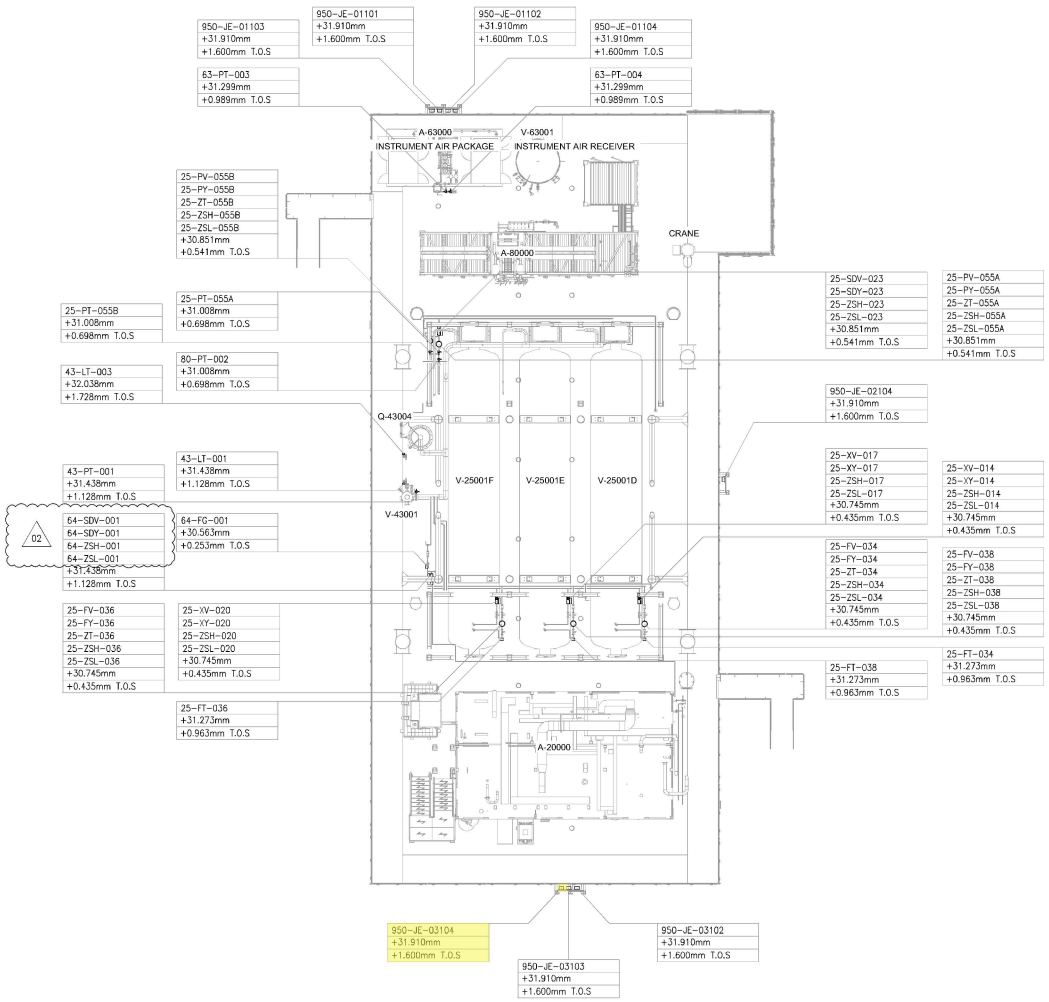
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DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

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

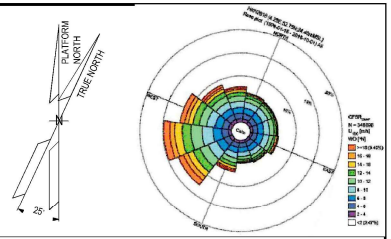
REV. 01



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

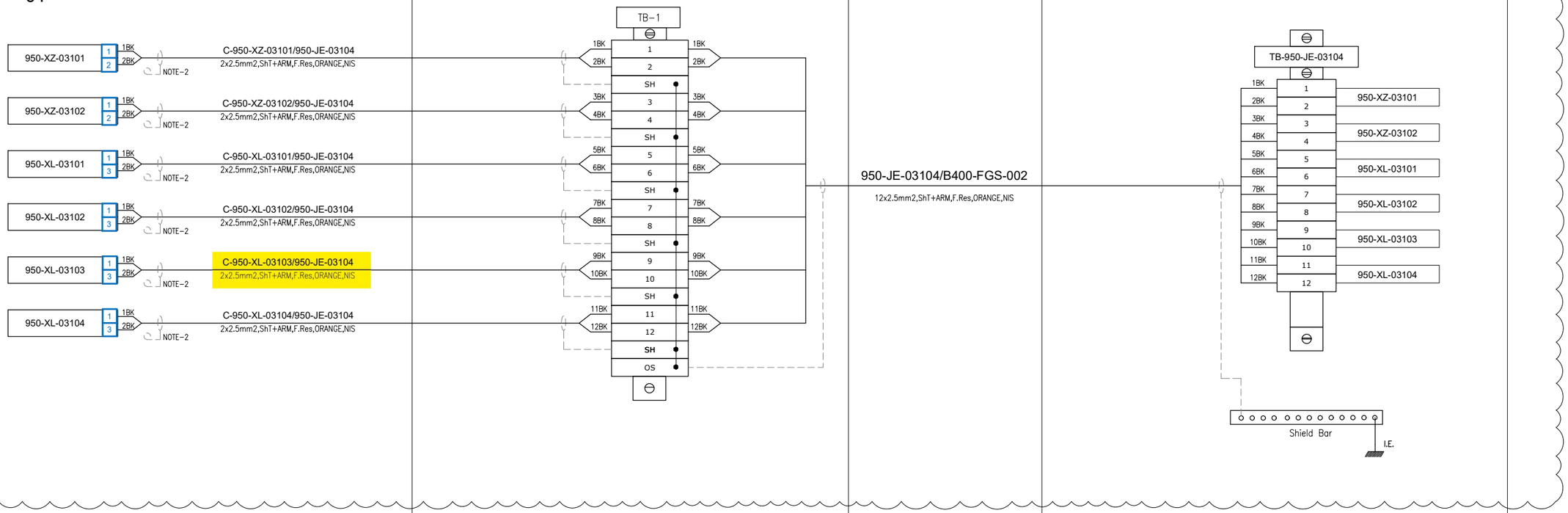
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DRAWING NO. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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 066	REV. 01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

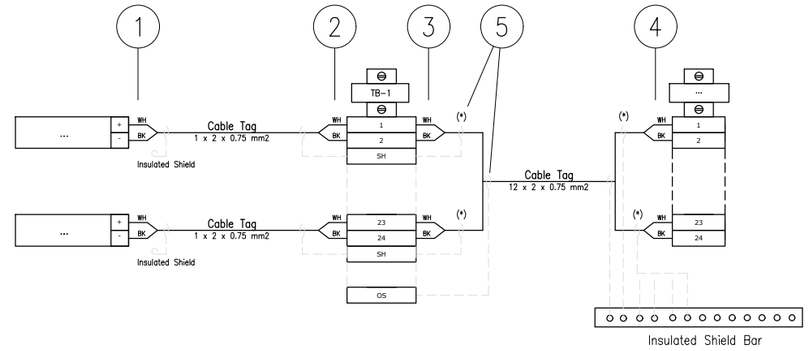
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

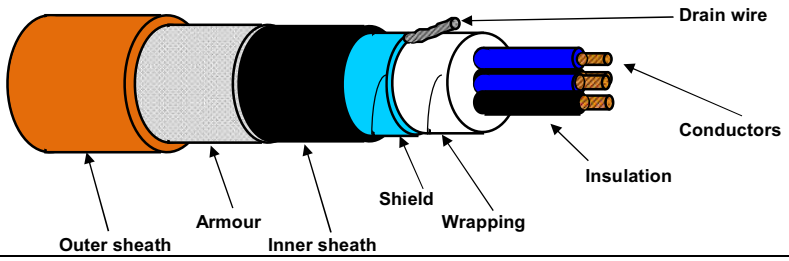
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-XL-03103/950-JE-03104	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-XL-03103	Flash Beacon (Amber)	Upper Deck		950-JE-03104	DO JB to FGS	Upper Deck	Junction Box	SMICVT12-2X2,5	Cable Cu CL2/MGT/XLPE/OS/ILSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Dou ble				U-SEC-20J / U-SEC-20K / U-SEC-20L

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.

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-950-XL-03104/950-JE-03104 : BEACON / MARSHALLING PCS			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)			Module	UD	
TASK	code	C10000332	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	950-XL-03104	To	950-JE-03104		

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.	PL
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		0,3	Ω
	SCREEN		0,3	Ω
	EARTH		NA	Ω
	ARMr		0,3	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

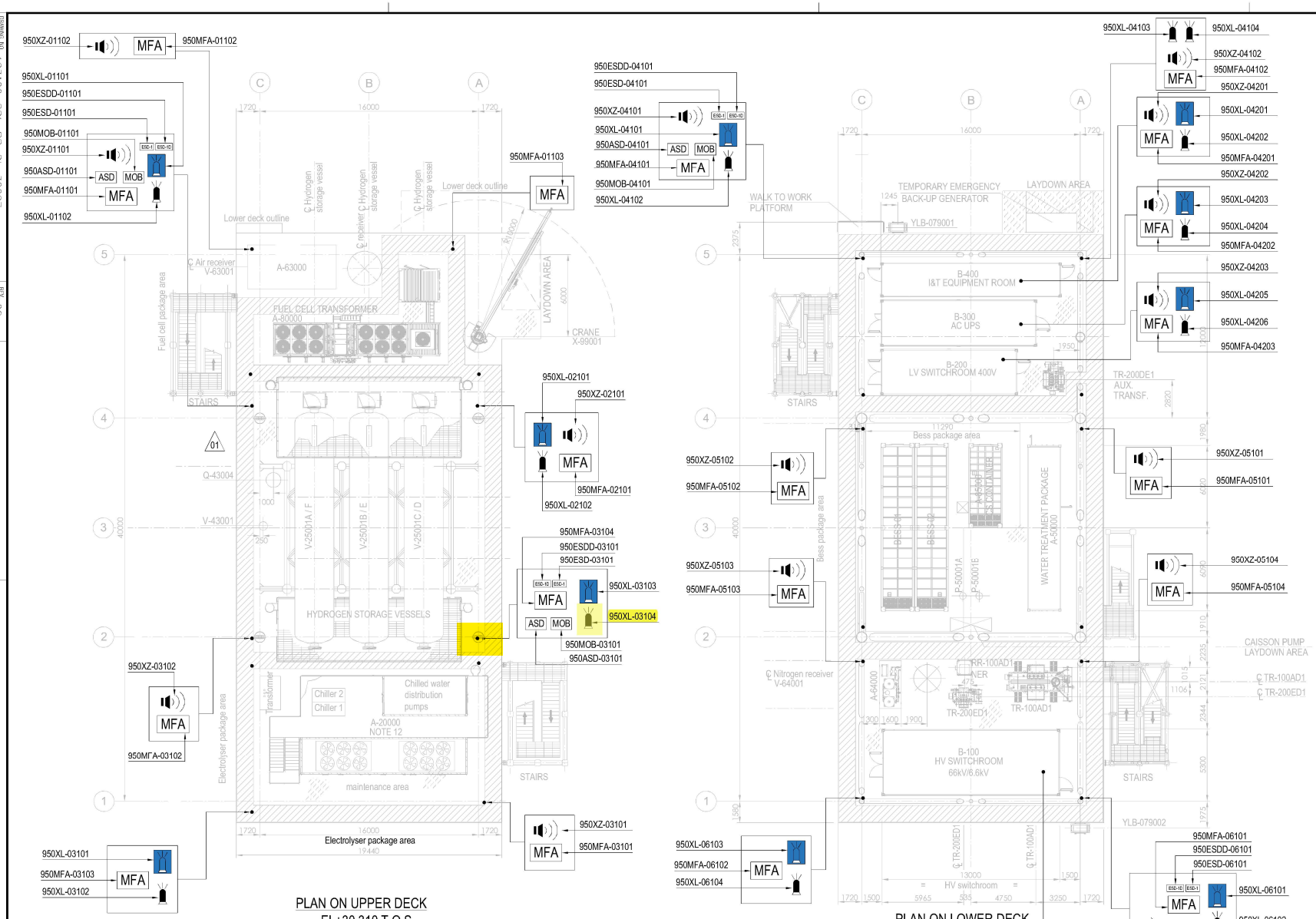
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-02	2024-12-16	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T16:18:18.770Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-16T16:06:53.891Z	



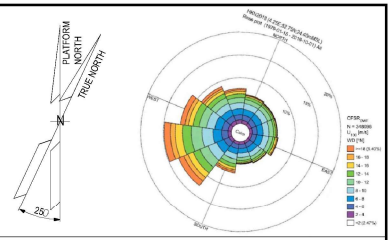
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

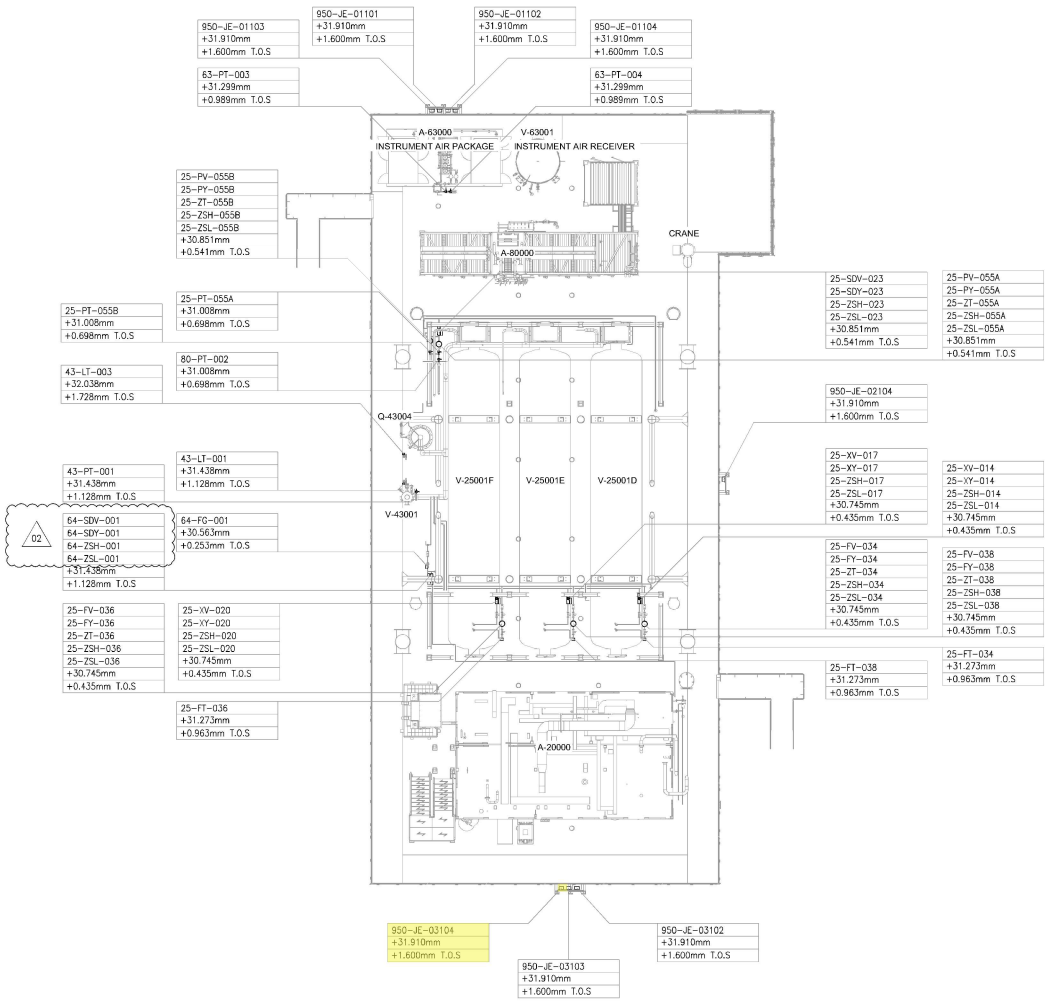
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

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

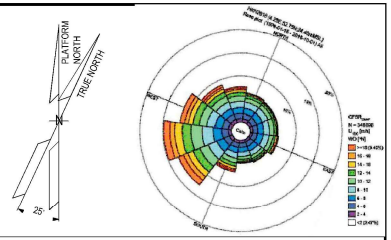
REV. 01



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

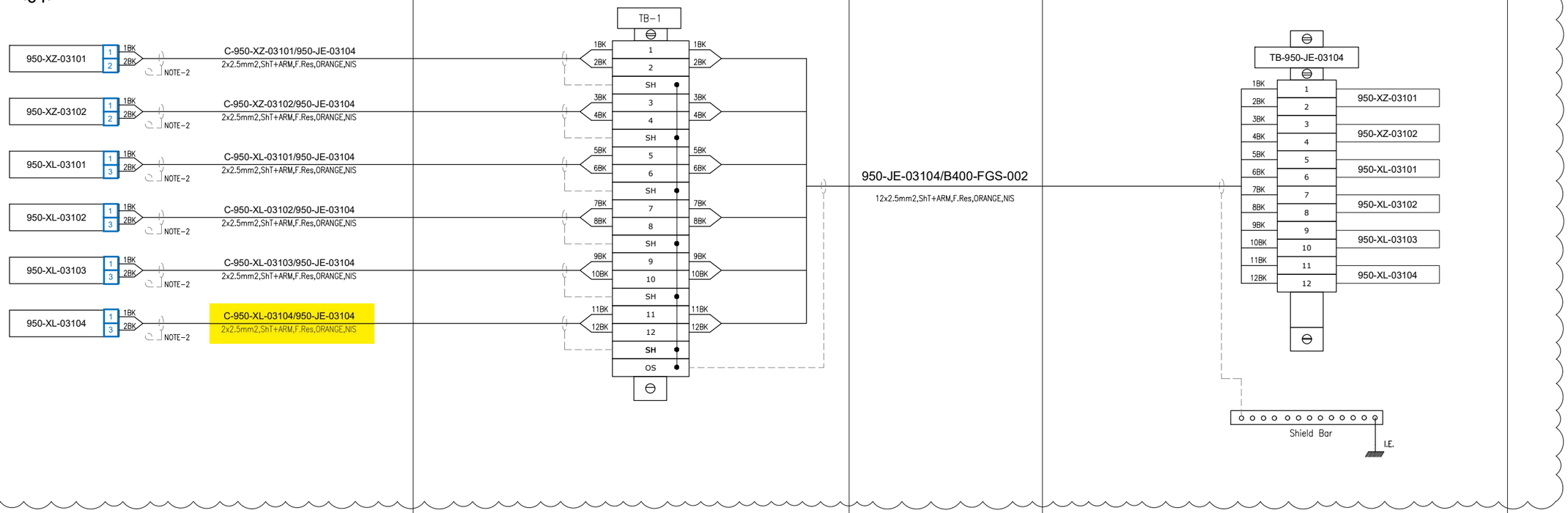
File Name : 123A90-DDL-IN-DL-40081 REV01.dwg

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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 066	REV. 01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

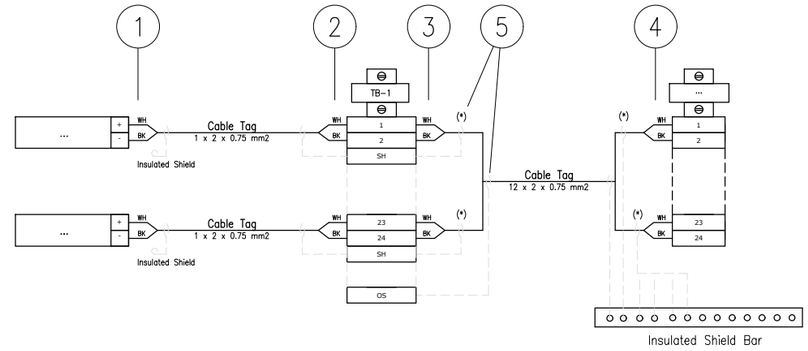
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

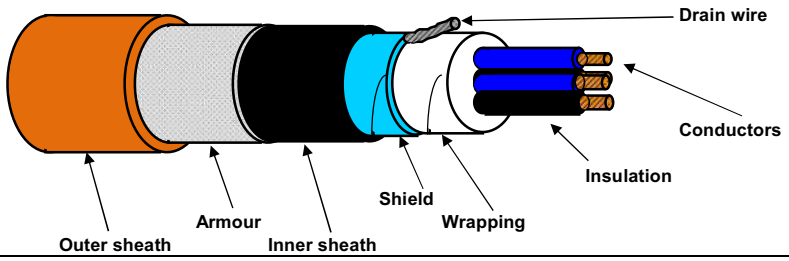
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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-950-XL-03104/950-JE-03104	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-XL-03104	Flash Beacon (Red)	Upper Deck		950-JE-03104	DO JB to FGS	Upper Deck	Junction Box	SMICVT2-2X2,5	Cable Cu CL2/MGT/XLPE/OS/ILSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Dou ble				U-SEC-20J / U-SEC-20K / U-SEC-20L

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.

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

CROSSWIND

ITEM	Tag	950-FDZ-03102	: Flame Detector - FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001509	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX43	Fire Detector

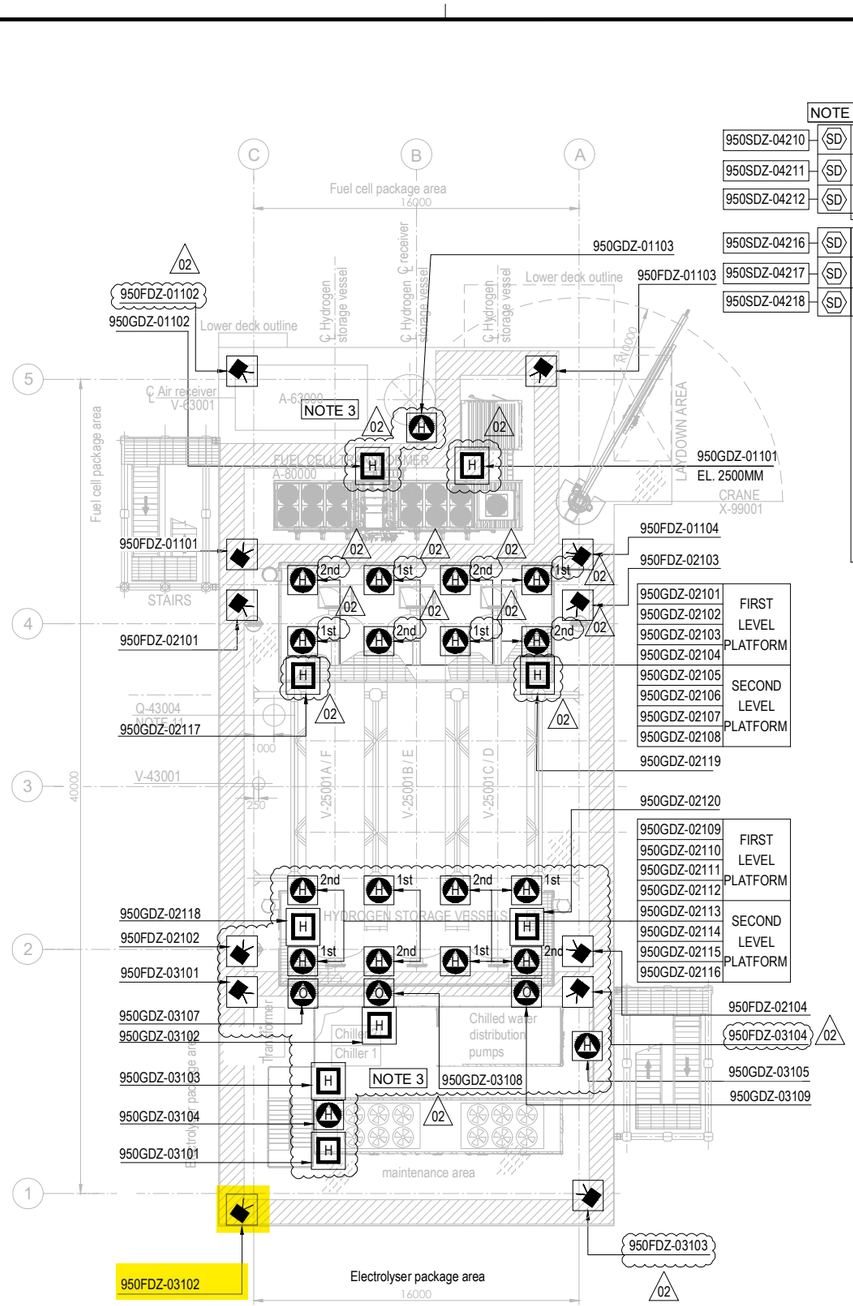
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to F&G detection layout drawings.	OK
4	Check test facility is installed.	OK
5	Check sensor activation lamp is visible.	NA
6	Check remote annunciator is installed (where required).	OK
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	OK
9	Check accessibility conforms to specifications, with platforming where necessary.	OK
10	Check calibration certificate (where applicable).	NA
11	Check electrical connections.	OK
12	Check earthing connections.	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

Comments

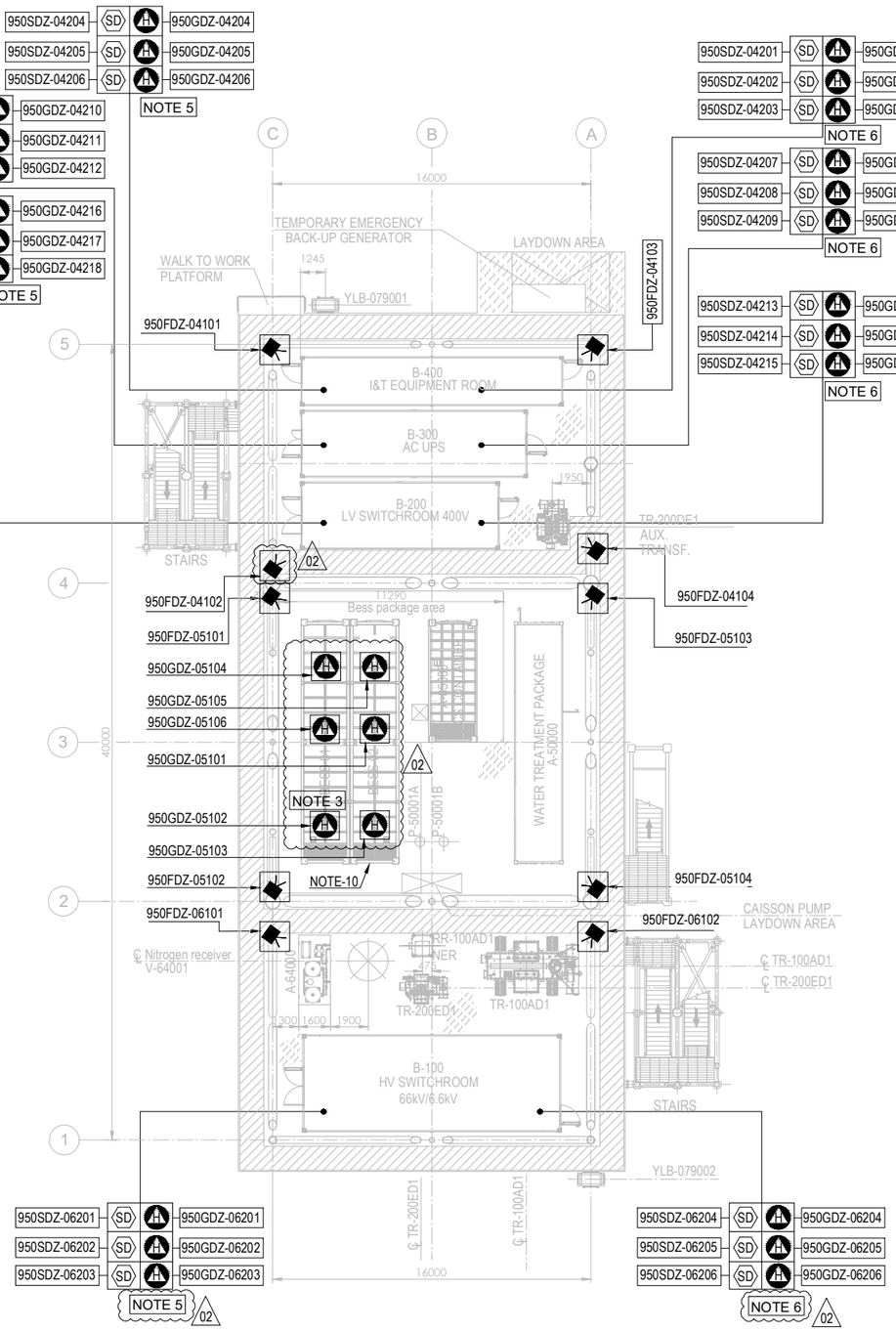
Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-05	
Signature	Digitaly signed by Francesco Zucca 2024-12-02T16:27:06.325Z	Digitaly signed by Giovanni Tangianu 2024-12-05T15:26:53.317Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

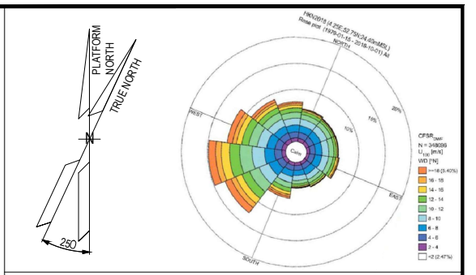


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03102	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

Note: link between terminals 3, 4 and 12 to be wired on site

950-FDZ-03101 — 1 RD, 3 WH, 2 BK — NOTE-2

C-950-FDZ-03101/950-JE-03102
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03102 — 1 RD, 3 WH, 2 BK — NOTE-2

C-950-FDZ-03102/950-JE-03102
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03103 — 1 RD, 3 WH, 2 BK — NOTE-2

C-950-FDZ-03103/950-JE-03102
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03104 — 1 RD, 3 WH, 2 BK — NOTE-2

C-950-FDZ-03104/950-JE-03102
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

RD WH BK	1	RD WH BK — TR1
	2	
	3	
	SH	
RD WH BK	4	RD WH BK — TR2
	5	
	6	
	SH	
RD WH BK	7	RD WH BK — TR3
	8	
	9	
	SH	
RD WH BK	10	RD WH BK — TR4
	11	
	12	
	SH	
SPARE	13	RD WH BK — TR5
	14	
	15	
	SH	
SPARE	16	RD WH BK — TR6
	17	
	18	
	SH	
	OS	

950-JE-03102/B400-FGS-003
~~950-JE-03102/B400-FGS-002~~
6x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03102

TR1 — RD WH BK	1	
Shield Bar	2	950-FDZ-03101
	3	
TR2 — RD WH BK	4	
Shield Bar	5	950-FDZ-03102
	6	
TR3 — RD WH BK	7	
Shield Bar	8	950-FDZ-03103
	9	
TR4 — RD WH BK	10	
Shield Bar	11	950-FDZ-03104
	12	
TR5 — RD WH BK	13	
Shield Bar	14	SPARE
	15	
TR6 — RD WH BK	16	
	17	SPARE
	18	

Shield Bar — I.E.

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03102

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

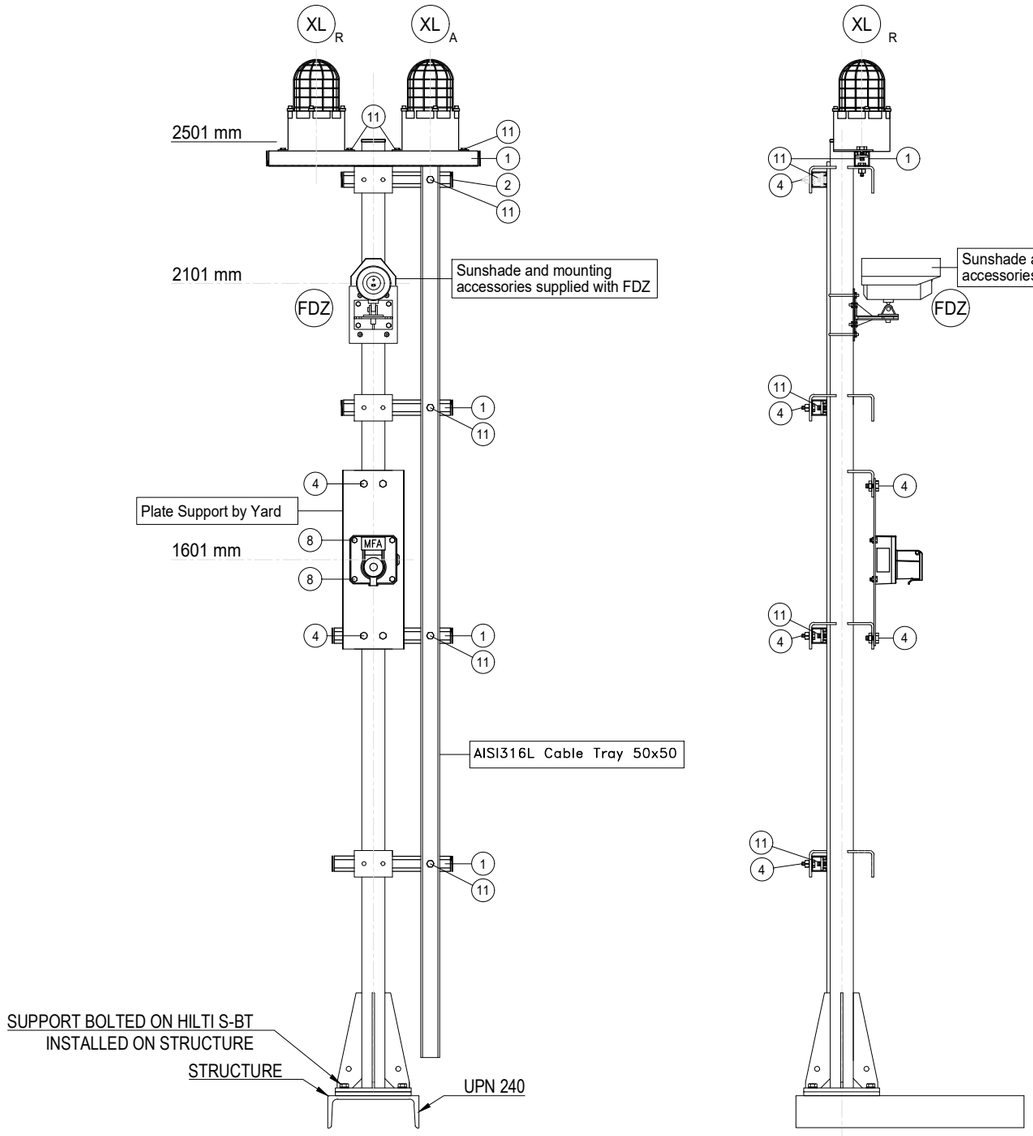
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 037	REV. 01

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

FGS-07

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	14
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	8

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03101
	XL_R	BEACON - RED	950-XL-03102
	FDZ	FLAME DETECTOR	950-FDZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03103
2	XL_A	BEACON - AMBER	~~950-XL-06102~~ 950-XL-06104
	XL_R	BEACON - RED	950-XL-06103
	FDZ	FLAME DETECTOR	~~950-FDZ-06102~~
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-06102

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_G	03/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

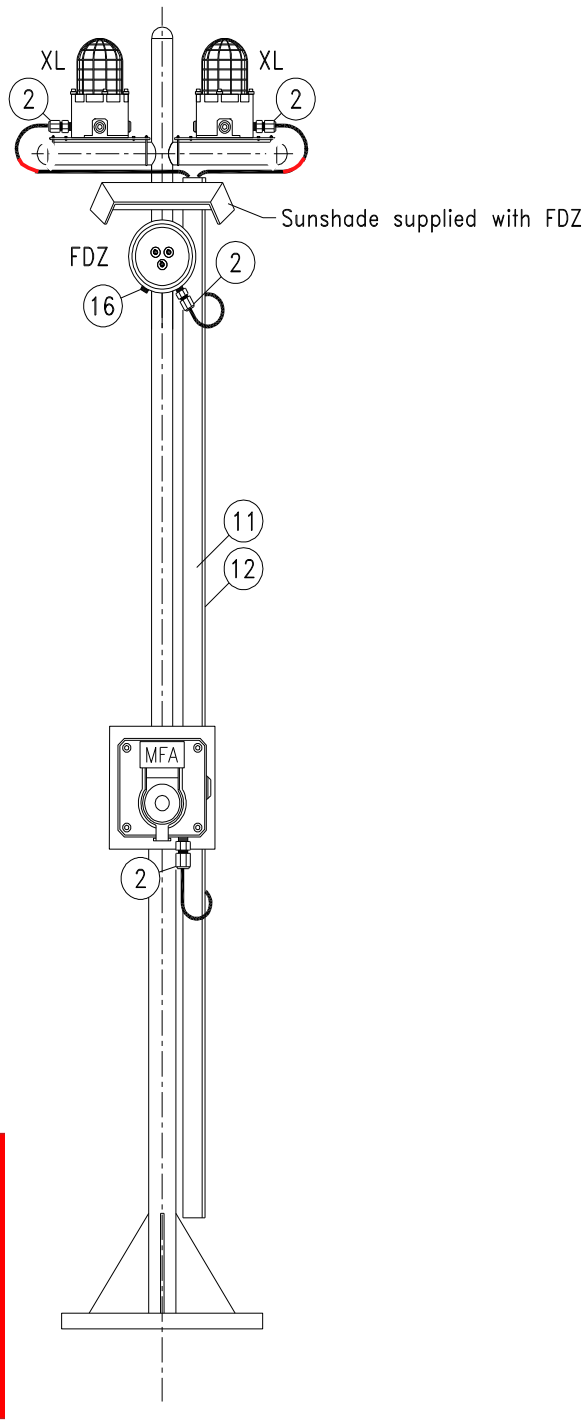
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 026	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-XL-03101 (AMBER)
	950-XL-03102 (RED)
	950-FDZ-03102
	950-MFA-03103
2	950-XL-06104 ~~950-XL-06102~~ (AMBER)
	950-XL-06103 (RED)
	950-FDZ-06102
	950-MFA-06102

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

REV.:	DATE:	SIGNATURE:
2_E	03/12/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

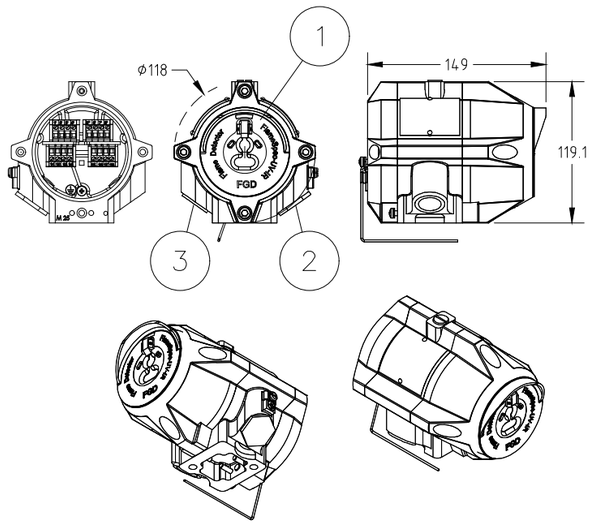
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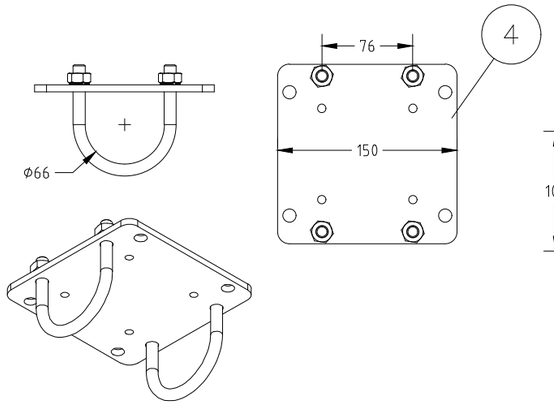
FLAME DETECTOR / 2" PIPE MOUNTING

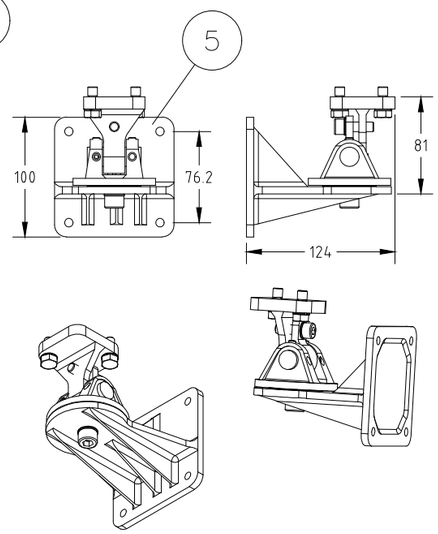
ITEM	DESCRIPTIONS	NR
1	Flame Detector, FGD FlameSpec FLS-UV-IR-AS11	1
2	Reducer M25 - M20 Ex d AISI 316	1
3	Stop Plug M25 Ex d AISI 316	1
4	2 inch Mounting Kit, FGD F107X0050.00	1
5	Tilt Assy, FGD F110X0090.00	1
6	Weather Shield, FGD F107X0240.00	1
7	Stainless Steel Name Plate	
8		
9		
10		

INSTALLATION QUANTITY

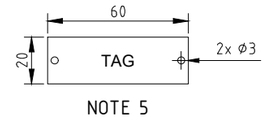
22





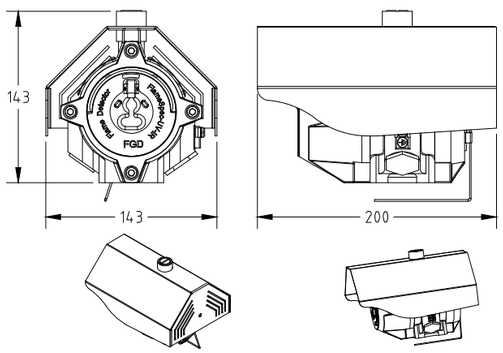


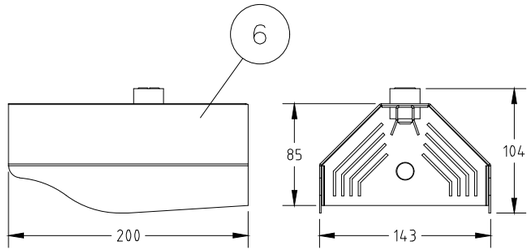
7 STAINLESS STEEL NAME PLATE DETAILS

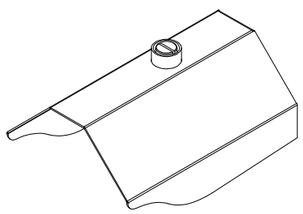


NOTE 5

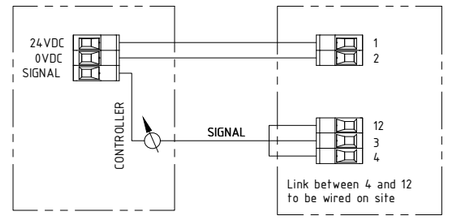
GA WEATHER SHIELD AND DETECTOR



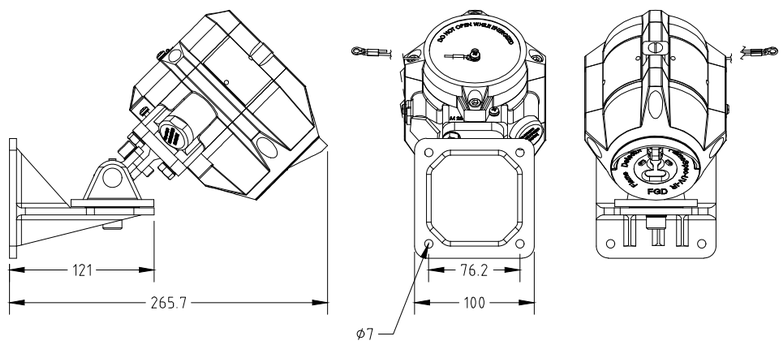




CONTROL CABINET — DETECTOR



INSTALLATION SCHEME



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 013

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FLAME DETECTOR / 2" PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-FDZ-01101
2	950-FDZ-01102
3	950-FDZ-01103
4	950-FDZ-01104
5	950-FDZ-02101
6	950-FDZ-02102
7	950-FDZ-02103
8	950-FDZ-02104
9	950-FDZ-03101
10	950-FDZ-03102
11	950-FDZ-03103
12	950-FDZ-03104
13	950-FDZ-04101
14	950-FDZ-04102
15	950-FDZ-04103
16	950-FDZ-04104
17	950-FDZ-05101
18	950-FDZ-05102
19	950-FDZ-05103
20	950-FDZ-05104
21	950-FDZ-06101
22	950-FDZ-06103

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING – TAG

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 014 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FLAME DETECTOR

POS.	TAG NUMBER	SERVICE
1	950-FDZ-01101	FZ-01 FUEL CELL PK AREA
2	950-FDZ-01102	FZ-01 FUEL CELL PK AREA
3	950-FDZ-01103	FZ-01 FUEL CELL PK AREA
4	950-FDZ-01104	FZ-01 FUEL CELL PK AREA
5	950-FDZ-02101	FZ-02 H2 STORAGE VESSELS AREA
6	950-FDZ-02102	FZ-02 H2 STORAGE VESSELS AREA
7	950-FDZ-02103	FZ-02 H2 STORAGE VESSELS AREA
8	950-FDZ-02104	FZ-02 H2 STORAGE VESSELS AREA
9	950-FDZ-03101	FZ-03 ELECTROLYZER PK AREA
10	950-FDZ-03102	FZ-03 ELECTROLYZER PK AREA
11	950-FDZ-03103	FZ-03 ELECTROLYZER PK AREA
12	950-FDZ-03104	FZ-03 ELECTROLYZER PK AREA
13	950-FDZ-04101	FZ-04 B-400/B-300/B-200 AREA
14	950-FDZ-04102	FZ-04 B-400/B-300/B-200 AREA
15	950-FDZ-04103	FZ-04 B-400/B-300/B-200 AREA
16	950-FDZ-04104	FZ-04 B-400/B-300/B-200 AREA
17	950-FDZ-05101	FZ-05 BESS AREA
18	950-FDZ-05102	FZ-05 BESS AREA
19	950-FDZ-05103	FZ-05 BESS AREA
20	950-FDZ-05104	FZ-05 BESS AREA
21	950-FDZ-06101	FZ-06 B-100 AREA
22	950-FDZ-06103	FZ-06 B-100 AREA

File: 1724000821-IN-DS-00004-02.xlsx
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FlameSpec
UV-IR
UV-IR Flame Detector



The FlameSpec UV-IR will detect fires and explosions extremely quickly, thereby allowing mitigation steps to be initiated more rapidly to limit event escalation.

Introduction

The FlameSpec-UV-IR flame detector provides ultra-fast response, high performance and reliable detection of a large variety of fires including hydrocarbon fires (visible and non-visible), as well as hydrogen and methane/hydrogen mixed fires. The detector addresses slow growing fires as well as fast eruptions of fire using improved UV-IR technology. The detector operates in all weather and light conditions.

Key Benefits

- High immunity to false alarm
- High sensitivity – up to 100 ft. (30m) for a 1 ft^2 (0.1m^2) n-heptane pan fire.
- Hydrocarbon and non-hydrocarbon flame detection.
- Ultra-fast detection mode detection within 5 milliseconds for fireballs or explosions
- High speed (<0.5s) model [X5] available for compliance with NFPA 33.
- Four sensitivity levels.
- Universal outputs, 3 and 4 wire, 4-20 mA sink / source, Fire, Auxiliary and Fault Relays. RS485 port using Modbus RTU.
- Event logger – alarms, faults and other relevant events are logged to non-volatile memory
- Built-in-Test (BIT) – Automatic and manual self-test of window cleanliness and overall detector operation.
- Dirty optics warning for preventive maintenance needs.
- HART® 7, for configuration & maintenance - option available.
- Window heater to avoid condensation and icing.
- Stainless steel tilt mount with horizontal and vertical adjustment.
- Functional safety - SIL 2 capable - option available.
- Detect high UV (sparks and arcs) or IR levels via auxiliary relay and 4-20mA.

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave. Anaheim, CA 92807 USA
Tel: (+1) 714-671-8500 | support@fg-detection.com
Version: F110V0010.08 • May 2023

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Response Characteristics

Fuel	Size	Sensitivity	Distance ft. (m)	Avrg Resp.Time (s)
N-Heptane	1 x 1 ft.	Extreme	98 (30)	2.0
N-Heptane	1 x 1 ft.	High	75 (23)	1.7
N-Heptane	1 x 1 ft.	Medium	49 (15)	1.0
N-Heptane	1 x 1 ft.	Low	16 (5)	1.0
Gasoline	2 x 2 ft.	Extreme	197 (60)	3.3
Gasoline	1 x 1 ft.	Extreme	98 (30)	1.8
Gasoline	1 x 1 ft.	Medium	49 (15)	1.3
Methane	32-in Plume	Extreme	59 (18)	1.4
Methane	32-in Plume	Medium	30 (9)	0.9
LPG	32-in Plume	Extreme	75 (23)	1.2
LPG	32-in Plume	High	56 (17)	1.6
LPG	32-in Plume	Medium	33 (10)	1.2
LPG	32-in Plume	Low	13 (4)	1.2
Diesel	1 x 1 ft.	Extreme	75 (23)	2.6
Diesel	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Extreme	75 (23)	3.3
JP5	1 x 1 ft.	High	56 (17)	1.8
JP5	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Low	16 (5)	1.2
Kerosene	1 x 1 ft.	Extreme	75 (23)	1.8
Kerosene	1 x 1 ft.	Medium	36 (11)	0.9
Methanol	1 x 1 ft.	Extreme	52 (16)	0.8
Methanol	1 x 1 ft.	High	43 (13)	3.2
Methanol	1 x 1 ft.	Medium	30 (9)	1.3
Methanol	1 x 1 ft.	Low	10 (3)	2.7
Ethanol	1 x 1 ft.	Extreme	62 (19)	4.1
Ethanol	1 x 1 ft.	Medium	31 (9.5)	2.9
Isopropanol	1 x 1 ft.	Extreme	75 (23)	2.2
Isopropanol	1 x 1 ft.	Medium	36 (11)	0.8
Polypropylene	1 x 1 ft.	Extreme	49 (15)	1.4
Polypropylene	1 x 1 ft.	Medium	23 (7)	0.9
Hydrogen	32-in Plume	Extreme	66 (20)	6.4
Hydrogen	32-in Plume	Medium	33 (10)	1.0
Syngas (30%CH_4:70%H_2)	32-in Plume	Extreme	59 (18)	3.2
Syngas (30%CH_4:70%H_2)	32-in Plume	Medium	33 (10)	1.2

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Immunity to False Alarm

False Alarm Source	Modulated		Unmodulated	
	Distance ft. (m)	Response	Distance ft. (m)	Response
Sunlight, Direct, Reflected		No Alarm		No Alarm
Incandescent frosted glass light, 300W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Fluorescent, 70W (3x23.3W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric arc	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Arc welding	10.0 (3.0)	No Alarm	10.0 (3.0)	No Alarm
Radiation heater, 2000W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Halogen lamp (500W) non-shielded	7.0 (2.0)	No Alarm	7.0 (2.0)	No Alarm
Halogen lamp (1000W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Mercury vapor lamp 160Wx3	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Exhausts	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Projector led	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Solenoid bell	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
soldering iron	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric Drill	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

FIRE DETECTION	**Detection time and distance**	5ms for fast burst of explosion 1s for 1 ft² (0.1m²) n-heptane pan fire at 0–50 ft. (0–15m) < 2s for 1 ft² (0.1m²) n-heptane pan fire at 50–100 ft. (15–30m)
	Sensitivity Range	4 sensitivity ranges: Extreme, High, Medium, Low
	Field of view (IR detection)	90° Horizontal, 80° Vertical
	Time Delay	0-30 seconds
	Built in Test	Automatic and Manual
ELECTRICAL SPECIFICATIONS	**Operating Voltage**	24 VDC nominal (18-32 VDC)
	Current Consumption	Standby: 120mA 180mA all systems in operation (including window heater)
	Electrical Entries	2x cable and conduit entries 3/4" NPT(F) or M25x1.5
	Wiring	14-17 AWG (2.5–1.0 mm²)
OUTPUTS	**Relays**	SPST volt-free contacts rated 2A at 30 VDC 3 relays: Alarm & Auxiliary – normally open; Fault – normally closed
	0-20mA (stepped) current output	3 wire and 4 wire (isolated) configurations (sink and source) HART® rev 7.0 (option available)
	Indication	Tri-color LED (Green, Yellow, Red)
	Modbus	RTU compatible on RS-485
MECHANICAL SPECIFICATIONS	**Size**	5.51 x 3.54 × 3.54" (140×90×90mm)
	Weight	Detector (Stainless Steel 316): 6.6 lbs. (3.0 kg) Tilt mount (Stainless Steel 316): 3.3 lbs. (1.5 kg)
ENVIRONMENTAL SPECIFICATIONS	**Temperature Range**	Operating: -67°F to +185°F (-55°C to +85°C) Storage: -67°F to +185°F (-55°C to +85°C)
	Humidity	Up to 99% (RH), non-condensing
	Ingress Protection	IP66 & 68 (2m, 24hr); NEMA 4X & 6P
APPROVALS	**ATEX**	ATEX: II 2 G D Ex db IIC T5 Gb or Ex db eb IIC T5 Gb and Ex tb IIIC T95°C Db -55°C<Ta<75°C Ex db IIC T4 Gb or Ex db eb IIC T4 Gb and Ex tb IIIC T105°C Db -55°C<Ta<85°C
	IECEx, INMETRO & PESO	Ex db IIC T5 Gb -50°C≤Ta≤75°C Ex db IIC T4 Gb -50°C≤Ta≤85°C
	FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 Class I, Zone 1, AEx/Ex db IIC T4 Gb T4 -50°C≤Ta≤85°C T5 -50°C≤Ta≤75°C
	EAC CU TR	1Ex d IIC T5 Gb or 1Ex de IIC T5 Gb and Ex tb IIIC T95°C Db -55°C≤Ta≤75°C 1Ex d IIC T4 Gb or 1Ex de IIC T4 Gb and Ex tb IIIC T105°C Db -55°C≤Ta≤85°C
	Performance	ANSI FM 3260 EN 54-10
	Functional safety	Certified SIL2 capable, per IEC 61508:2010 High & Low demand (option available)

ACCESSORIES	**Tilt mount, model FLS-TMO-S01**	**High vibration mounting bracket, model FLS-MIL-S01**
	Weather cover, model FLS-WCO-S01	**Flame simulator, model FLS-FSIM-UV-IR-KIT**
	2" & 3" pole mount adapter, model FLS-PMA-S23	**Airshield, model FLS-ASD-S01**
	Duct mount with window, model FLS-DMW-S01	**Duct mount for airshield, model FLS-DMX-S01**
WARRANTY	**5 years**	

FIRE & GAS DETECTION TECHNOLOGIES INC.

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave. Anaheim, CA 92807 USA
Tel: (+1) 714-671-8500 | support@fg-detection.com
Specifications subject to change without notice.

FlameSpec

FLS-FSIM

Flame Simulator Family



The FlameSpec Flame Simulator range provides fast and convenient detector verification in the field.

Introduction

Flame simulators are often used by industry to perform detector testing during commissioning and periodic system testing. FlameSpec simulators differ from many competing products because they test the active sensors and detection algorithms of the devices without using “bypass” techniques to trick the detector into responding.

The FSIM range is lightweight, simple to use and has a modern ergonomic design. Suitable for use in hazardous areas, the FSIM-IR3 has an extended trigger distance of up to 30 feet (10 meters) from the detector.

Three FSIM models are available, depending on the FlameSpec Detector to be tested, IR3, IR3-H2 and UV-IR.

Key Benefits

- Tests the active sensors and detection algorithms, without using “bypass” techniques.
  - No tricks, detector performance assured.
- Works from distance up to 30 feet (10 meters).
  - Reduces the need for scaffolding.
- Hazardous area use approved.
  - Hot work permits not needed required.
- Lightweight and simple to use.
  - More than 1,000 activations between charges.
- Includes carrying strap, protective storage case, battery charger and operating instructions.
- Easy to transport & supplied with everything needed.
- Complementary to FlameSpec Detector inbuilt test features.
  - Enables full end to end (loop) system test.

FIRE & GAS DETECTION TECHNOLOGIES INC.

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Tel: (+1) 714-671-8500 | support@fg-detection.com

Version: F300V0010.04 • Oct 2023

FlameSpec-FLS-FSIM

Flame Simulator Family

	Simulator Kits Part Nos	FLS-FSIM-IR3-KIT	FLS-FSIM-IR3-H2-KIT	FLS-FSIM-UV-IR-KIT
	Detector type	FLS-IR3[1] FLS-IR3-HD[1]	FLS-IR3-H2 FLS-IR3-H2-HD	FLS-UV-IR FLS-UV-IR-HD
OPERATION DISTANCES	**Detector Sensitivity**	ft. m	ft. m	ft. m
	Extreme	30 9.0	30 9.0	42.5 13.0
	High	20 6.0	20 6.0	26 8.0
	Medium	10 3.0	10 3.0	20 6.0
	Low	3.3[2] 1.0[2]	3.3[2] 1.0[2]	6.6 2.0
ELECTRICAL SPECIFICATIONS	**Operating Voltage nominal, V**	3.7	3.7	3.7
	Number of activations between charging	~1000	~1000	~50
	Battery Capacity, mAh	>3000	>3000	>3000
	Charging time, hours	up to 3	up to 3	up to 3
	Indication	3 Color LED (Green, Yellow, Red)		
	All Simulator Models			
MECHANICAL SPECIFICATIONS	**Size**	3.9 x 3.9 x 7.8" (100 x 100 x 200mm)		
	Weight	3.96 lbs. (1.8 kg)		
	Simulator Enclosure Material	Painted Aluminum LM25		
ENVIRONMENTAL SPECIFICATIONS	**Ingress Protection**	IP65 (NEMA 4X)		
	Humidity	up to 99% (RH), non-condensing		
	Operating temperature	Min: −4°F (−20°C) Max: +122°F (+50°C)		
APPROVALS	**Explosion proof**	ATEX Ex II 2 G Ex db ib op is IIC T6 Gb Ex II 2 D Ex tb ib op is IIIC T85°C Db -20°C<Ta<+50°C		
ACCESSORIES included in kits	**Carrying Case**	FLS-FSIM-CASE		
	Carrying Strap	FLS-FSIM-STRAP		
	Cover Tool	FLS-FSIM-TOOL		
	Allen Key	FLS-FSIM-ALLEN		
	Battery Charger	FLS-FSIM-CHRGR		
WARRANTY	**3 Years**			

[1]not CO2L variant
[2]with collimator removed

FIRE & GAS DETECTION TECHNOLOGIES INC.

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Tel: (+1) 714-671-8500 | support@fg-detection.com

ITEM	Tag	950-FDZ-03103	: Flame Detector - FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001510	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX43	Fire Detector

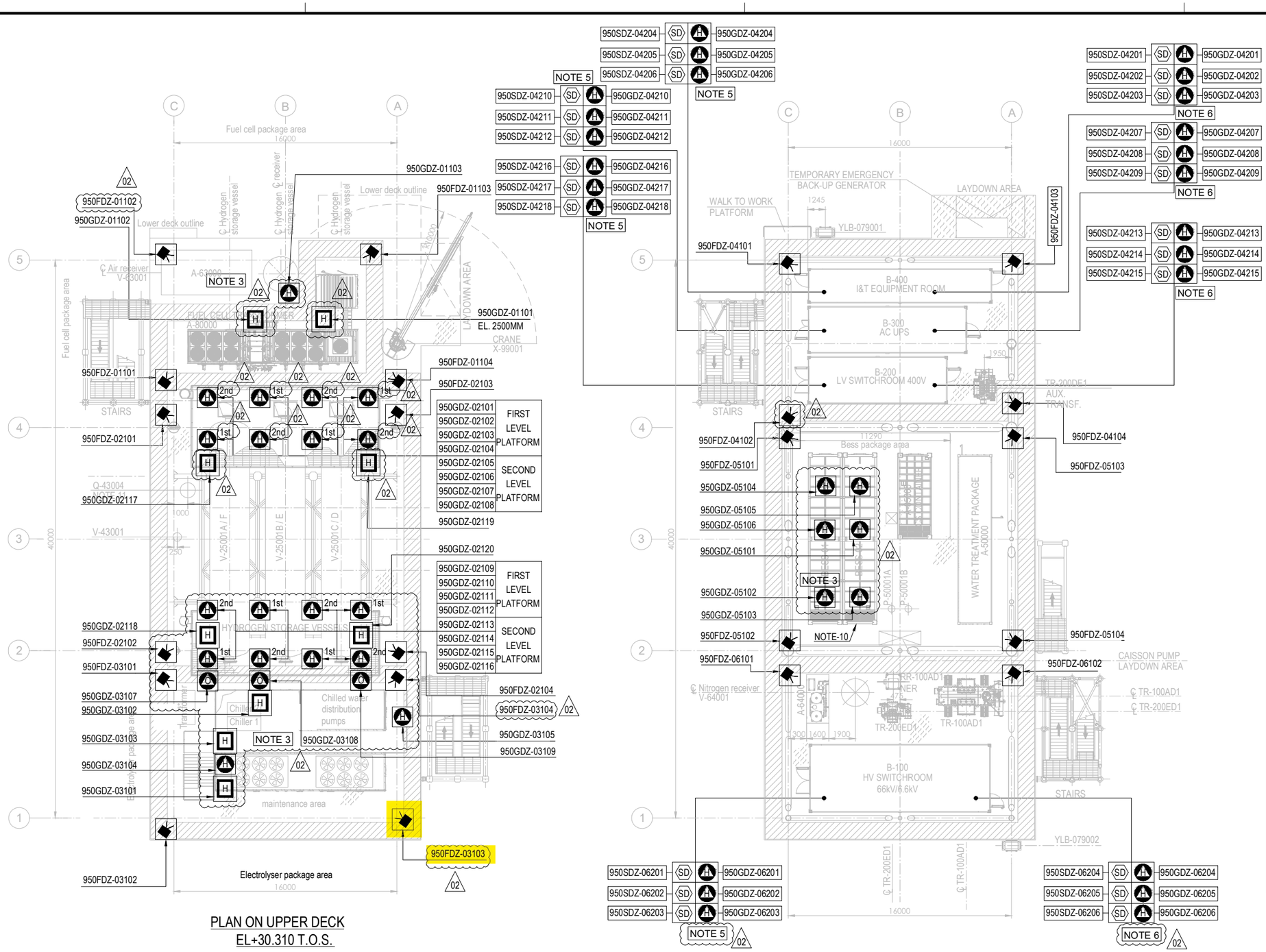
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to F&G detection layout drawings.	OK
4	Check test facility is installed.	NA
5	Check sensor activation lamp is visible.	NA
6	Check remote annunciator is installed (where required).	NA
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	OK
9	Check accessibility conforms to specifications, with platforming where necessary.	OK
10	Check calibration certificate (where applicable).	NA
11	Check electrical connections.	OK
12	Check earthing connections.	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

Comments

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Andrea Andreani	
Date	2024-12-09	2024-12-11	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-09T10:34:26.839Z	PROVERLIS Digitaly signed by Andrea Andreani 2024-12-11T16:30:57.100Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



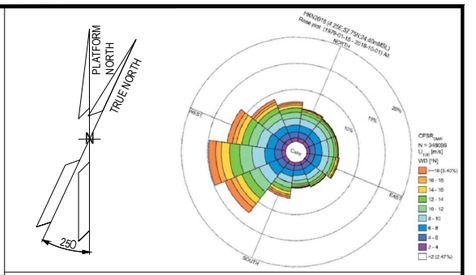
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03102	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

Note: link between terminals 3, 4 and 12 to be wired on site

950-FDZ-03101 — RD, WH, BK — NOTE-2 — C-950-FDZ-03101/950-JE-03102 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03102 — RD, WH, BK — NOTE-2 — C-950-FDZ-03102/950-JE-03102 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03103 — RD, WH, BK — NOTE-2 — C-950-FDZ-03103/950-JE-03102 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03104 — RD, WH, BK — NOTE-2 — C-950-FDZ-03104/950-JE-03102 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

RD, WH, BK	1	TR1
	2	
	3	
	SH	
RD, WH, BK	4	TR2
	5	
	6	
	SH	
RD, WH, BK	7	TR3
	8	
	9	
	SH	
RD, WH, BK	10	TR4
	11	
	12	
	SH	
SPARE	13	TR5
	14	
	15	
	SH	
SPARE	16	TR6
	17	
	18	
	SH	
	OS	

950-JE-03102/B400-FGS-003

~~950-JE-03102/B400-FGS-002~~

6x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03102

TR1 — RD, WH, BK	1	950-FDZ-03101
Shield Bar	2	
	3	
TR2 — RD, WH, BK	4	950-FDZ-03102
Shield Bar	5	
	6	
TR3 — RD, WH, BK	7	950-FDZ-03103
Shield Bar	8	
	9	
TR4 — RD, WH, BK	10	950-FDZ-03104
Shield Bar	11	
	12	
TR5 — RD, WH, BK	13	SPARE
Shield Bar	14	
	15	
TR6 — RD, WH, BK	16	SPARE
	17	
	18	

Shield Bar — I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03102

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

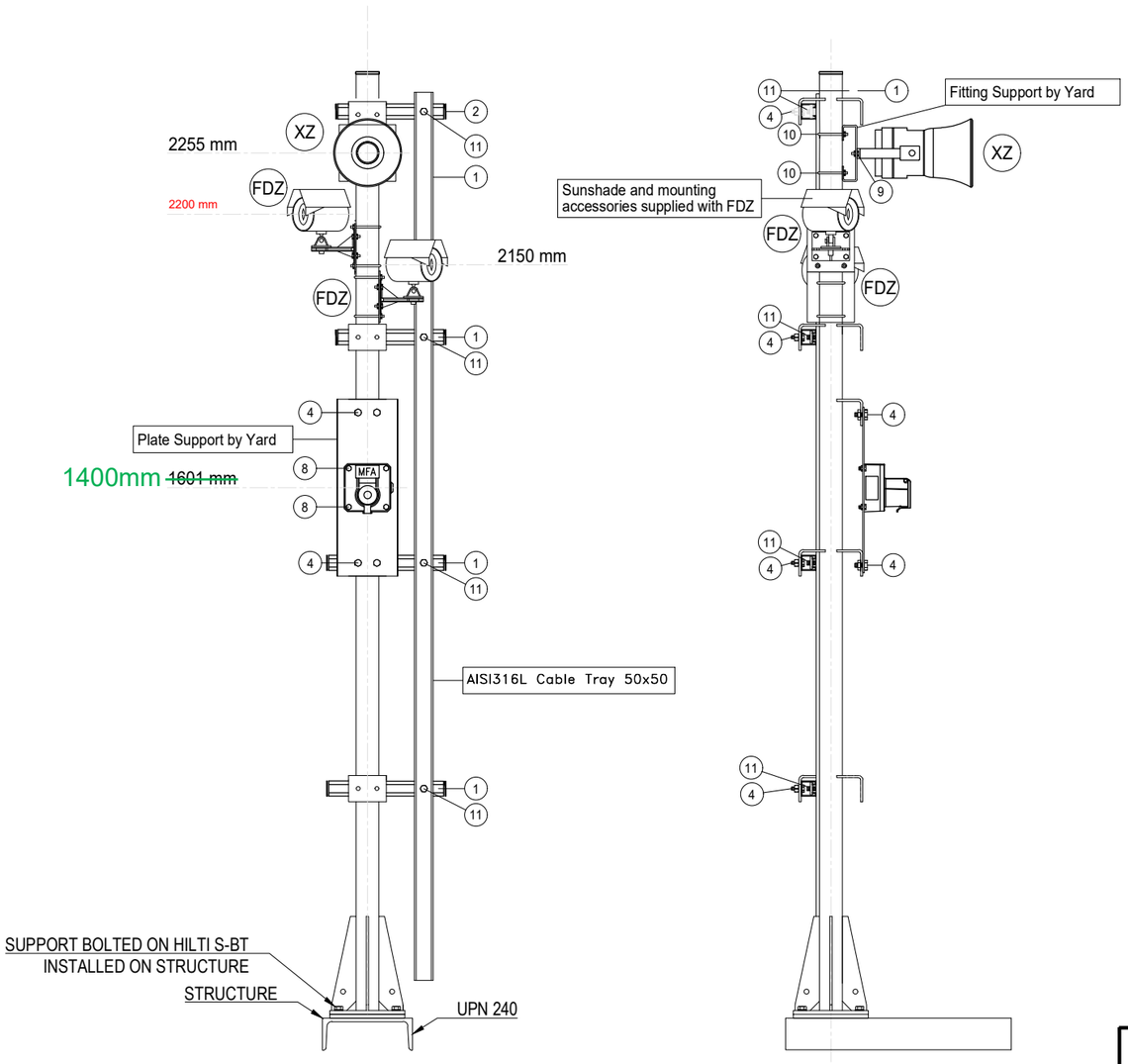
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 037	REV. 01

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

FGS-05

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	12
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
~~9~~	~~AISI 316L BOLT M6x35 + NUT M6 + WASHER M6~~	2
10	AISI 316L 2" U BOLT M8+ N.2 NUT M8 + N.2 WASHER M8	2
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	FDZ	FLAME DETECTOR	950-FDZ-01102
	FDZ	FLAME DETECTOR	~~950-FDZ-02101~~
	XZ	SOUNDER	950-XZ-01102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-01102
2	FDZ	FLAME DETECTOR	950-FDZ-02102
	FDZ	FLAME DETECTOR	950-FDZ-03101
	XZ	SOUNDER	950-XZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03102
3	FDZ	FLAME DETECTOR	950-FDZ-03103
	FDZ	FLAME DETECTOR	~~950-FDZ-02104~~ 950-FDZ-02102
	XZ	SOUNDER	950-XZ-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03101

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

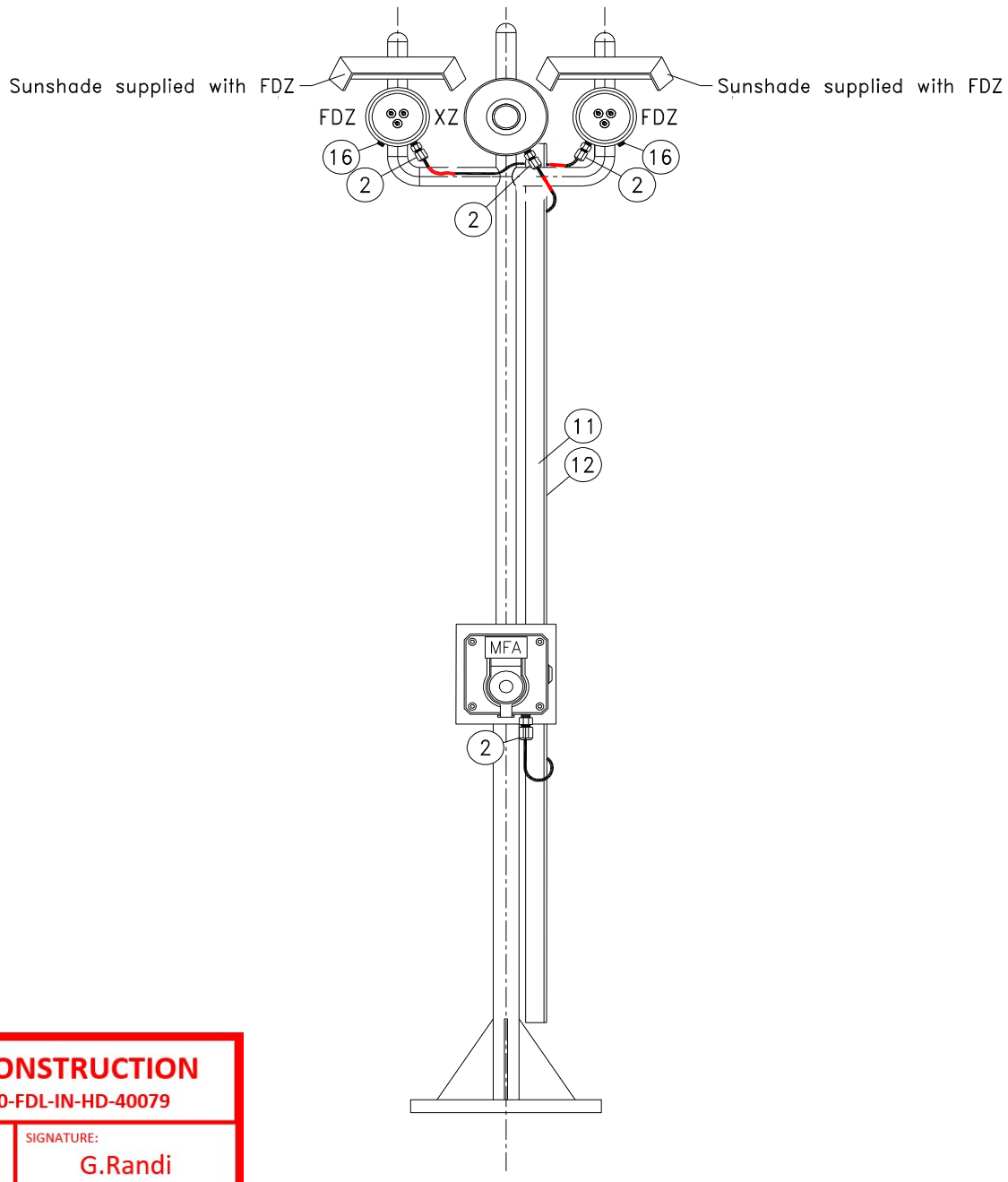
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 024	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-FDZ-01102
	950-XZ-01102
	~~950-FDZ-02101~~
	950-MFA-01102
2	950-FDZ-02102
	950-XZ-03102
	950-FDZ-03101
	950-MFA-03102
3	950-FDZ-03103
	950-XZ-03101
	950-FDZ-02104
	950-MFA-03101

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

REV.:	DATE:	SIGNATURE:
2_E	03/12/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	2
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

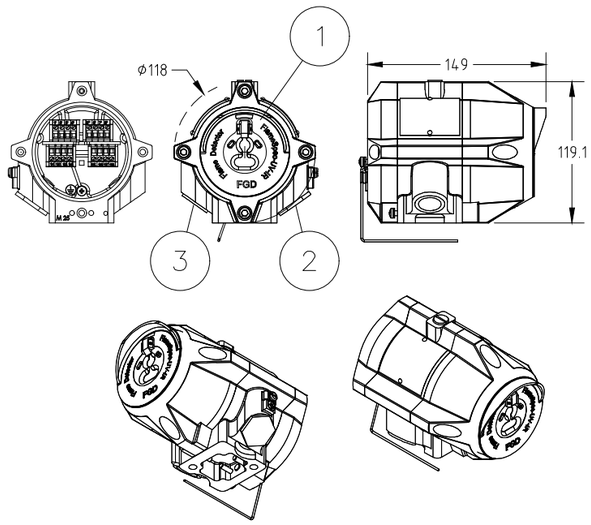
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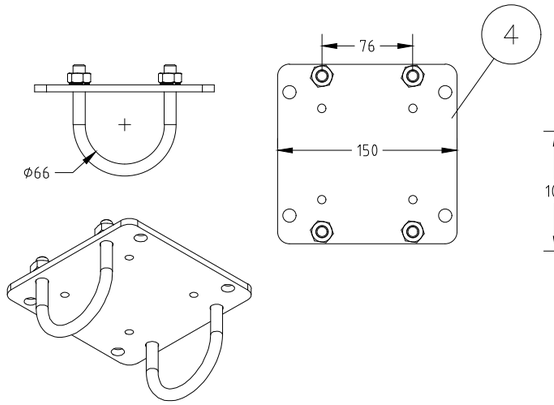
FLAME DETECTOR / 2" PIPE MOUNTING

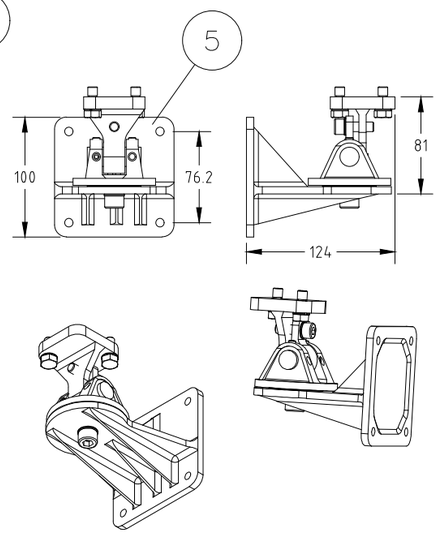
ITEM	DESCRIPTIONS	NR
1	Flame Detector, FGD FlameSpec FLS-UV-IR-AS11	1
2	Reducer M25 - M20 Ex d AISI 316	1
3	Stop Plug M25 Ex d AISI 316	1
4	2 inch Mounting Kit, FGD F107X0050.00	1
5	Tilt Assy, FGD F110X0090.00	1
6	Weather Shield, FGD F107X0240.00	1
7	Stainless Steel Name Plate	
8		
9		
10		

INSTALLATION QUANTITY

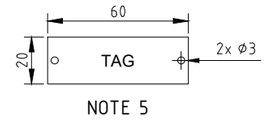
22





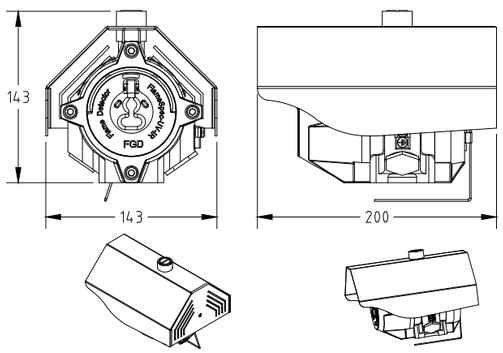


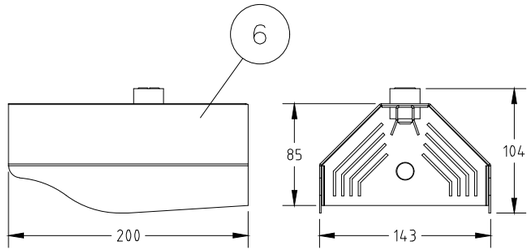
7 STAINLESS STEEL NAME PLATE DETAILS

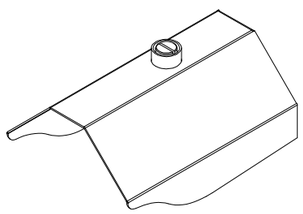


NOTE 5

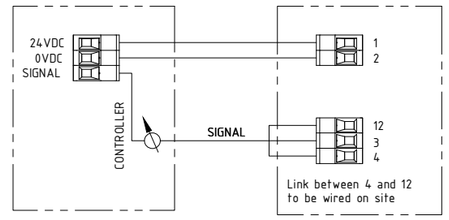
GA WEATHER SHIELD AND DETECTOR



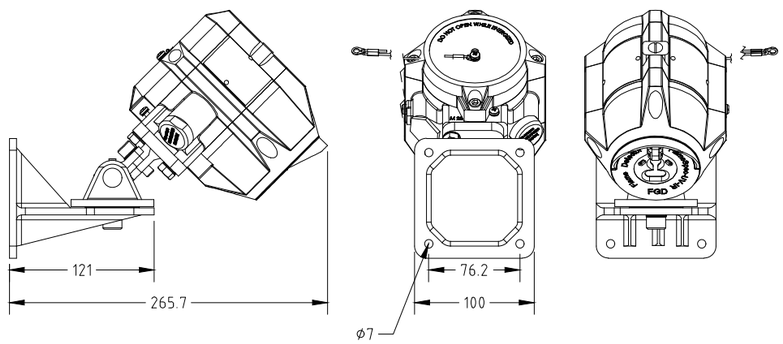




CONTROL CABINET — DETECTOR



INSTALLATION SCHEME



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 013

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FLAME DETECTOR / 2" PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-FDZ-01101
2	950-FDZ-01102
3	950-FDZ-01103
4	950-FDZ-01104
5	950-FDZ-02101
6	950-FDZ-02102
7	950-FDZ-02103
8	950-FDZ-02104
9	950-FDZ-03101
10	950-FDZ-03102
11	950-FDZ-03103
12	950-FDZ-03104
13	950-FDZ-04101
14	950-FDZ-04102
15	950-FDZ-04103
16	950-FDZ-04104
17	950-FDZ-05101
18	950-FDZ-05102
19	950-FDZ-05103
20	950-FDZ-05104
21	950-FDZ-06101
22	950-FDZ-06103

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FLAME DETECTOR / 2" PIPE MOUNTING – TAG

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

A3	DRAWING NO.	SHEET	REV.
	1724000821-IN-DA-00003	014	02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FLAME DETECTOR

POS.	TAG NUMBER	SERVICE
1	950-FDZ-01101	FZ-01 FUEL CELL PK AREA
2	950-FDZ-01102	FZ-01 FUEL CELL PK AREA
3	950-FDZ-01103	FZ-01 FUEL CELL PK AREA
4	950-FDZ-01104	FZ-01 FUEL CELL PK AREA
5	950-FDZ-02101	FZ-02 H2 STORAGE VESSELS AREA
6	950-FDZ-02102	FZ-02 H2 STORAGE VESSELS AREA
7	950-FDZ-02103	FZ-02 H2 STORAGE VESSELS AREA
8	950-FDZ-02104	FZ-02 H2 STORAGE VESSELS AREA
9	950-FDZ-03101	FZ-03 ELECTROLYZER PK AREA
10	950-FDZ-03102	FZ-03 ELECTROLYZER PK AREA
11	950-FDZ-03103	FZ-03 ELECTROLYZER PK AREA
12	950-FDZ-03104	FZ-03 ELECTROLYZER PK AREA
13	950-FDZ-04101	FZ-04 B-400/B-300/B-200 AREA
14	950-FDZ-04102	FZ-04 B-400/B-300/B-200 AREA
15	950-FDZ-04103	FZ-04 B-400/B-300/B-200 AREA
16	950-FDZ-04104	FZ-04 B-400/B-300/B-200 AREA
17	950-FDZ-05101	FZ-05 BESS AREA
18	950-FDZ-05102	FZ-05 BESS AREA
19	950-FDZ-05103	FZ-05 BESS AREA
20	950-FDZ-05104	FZ-05 BESS AREA
21	950-FDZ-06101	FZ-06 B-100 AREA
22	950-FDZ-06103	FZ-06 B-100 AREA

File: 1724000821-IN-DS-00004-02.xlsx
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FlameSpec
UV-IR
UV-IR Flame Detector



The FlameSpec UV-IR will detect fires and explosions extremely quickly, thereby allowing mitigation steps to be initiated more rapidly to limit event escalation.

Introduction

The FlameSpec-UV-IR flame detector provides ultra-fast response, high performance and reliable detection of a large variety of fires including hydrocarbon fires (visible and non-visible), as well as hydrogen and methane/hydrogen mixed fires. The detector addresses slow growing fires as well as fast eruptions of fire using improved UV-IR technology. The detector operates in all weather and light conditions.

Key Benefits

- High immunity to false alarm
- High sensitivity – up to 100 ft. (30m) for a 1 ft^2 (0.1m^2) n-heptane pan fire.
- Hydrocarbon and non-hydrocarbon flame detection.
- Ultra-fast detection mode detection within 5 milliseconds for fireballs or explosions
- High speed (<0.5s) model [X5] available for compliance with NFPA 33.
- Four sensitivity levels.
- Universal outputs, 3 and 4 wire, 4-20 mA sink / source, Fire, Auxiliary and Fault Relays. RS485 port using Modbus RTU.
- Event logger – alarms, faults and other relevant events are logged to non-volatile memory
- Built-in-Test (BIT) – Automatic and manual self-test of window cleanliness and overall detector operation.
- Dirty optics warning for preventive maintenance needs.
- HART® 7, for configuration & maintenance - option available.
- Window heater to avoid condensation and icing.
- Stainless steel tilt mount with horizontal and vertical adjustment.
- Functional safety - SIL 2 capable - option available.
- Detect high UV (sparks and arcs) or IR levels via auxiliary relay and 4-20mA.

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave. Anaheim, CA 92807 USA
Tel: (+1) 714-671-8500 | support@fg-detection.com
Version: F110V0010.08 • May 2023

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Response Characteristics

Fuel	Size	Sensitivity	Distance ft. (m)	Avrg Resp.Time (s)
N-Heptane	1 x 1 ft.	Extreme	98 (30)	2.0
N-Heptane	1 x 1 ft.	High	75 (23)	1.7
N-Heptane	1 x 1 ft.	Medium	49 (15)	1.0
N-Heptane	1 x 1 ft.	Low	16 (5)	1.0
Gasoline	2 x 2 ft.	Extreme	197 (60)	3.3
Gasoline	1 x 1 ft.	Extreme	98 (30)	1.8
Gasoline	1 x 1 ft.	Medium	49 (15)	1.3
Methane	32-in Plume	Extreme	59 (18)	1.4
Methane	32-in Plume	Medium	30 (9)	0.9
LPG	32-in Plume	Extreme	75 (23)	1.2
LPG	32-in Plume	High	56 (17)	1.6
LPG	32-in Plume	Medium	33 (10)	1.2
LPG	32-in Plume	Low	13 (4)	1.2
Diesel	1 x 1 ft.	Extreme	75 (23)	2.6
Diesel	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Extreme	75 (23)	3.3
JP5	1 x 1 ft.	High	56 (17)	1.8
JP5	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Low	16 (5)	1.2
Kerosene	1 x 1 ft.	Extreme	75 (23)	1.8
Kerosene	1 x 1 ft.	Medium	36 (11)	0.9
Methanol	1 x 1 ft.	Extreme	52 (16)	0.8
Methanol	1 x 1 ft.	High	43 (13)	3.2
Methanol	1 x 1 ft.	Medium	30 (9)	1.3
Methanol	1 x 1 ft.	Low	10 (3)	2.7
Ethanol	1 x 1 ft.	Extreme	62 (19)	4.1
Ethanol	1 x 1 ft.	Medium	31 (9.5)	2.9
Isopropanol	1 x 1 ft.	Extreme	75 (23)	2.2
Isopropanol	1 x 1 ft.	Medium	36 (11)	0.8
Polypropylene	1 x 1 ft.	Extreme	49 (15)	1.4
Polypropylene	1 x 1 ft.	Medium	23 (7)	0.9
Hydrogen	32-in Plume	Extreme	66 (20)	6.4
Hydrogen	32-in Plume	Medium	33 (10)	1.0
Syngas (30%CH_4:70%H_2)	32-in Plume	Extreme	59 (18)	3.2
Syngas (30%CH_4:70%H_2)	32-in Plume	Medium	33 (10)	1.2

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Immunity to False Alarm

False Alarm Source	Modulated		Unmodulated	
	Distance ft. (m)	Response	Distance ft. (m)	Response
Sunlight, Direct, Reflected		No Alarm		No Alarm
Incandescent frosted glass light, 300W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Fluorescent, 70W (3x23.3W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric arc	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Arc welding	10.0 (3.0)	No Alarm	10.0 (3.0)	No Alarm
Radiation heater, 2000W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Halogen lamp (500W) non-shielded	7.0 (2.0)	No Alarm	7.0 (2.0)	No Alarm
Halogen lamp (1000W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Mercury vapor lamp 160Wx3	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Exhausts	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Projector led	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Solenoid bell	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
soldering iron	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric Drill	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

FIRE DETECTION	**Detection time and distance**	5ms for fast burst of explosion 1s for 1 ft² (0.1m²) n-heptane pan fire at 0–50 ft. (0–15m) < 2s for 1 ft² (0.1m²) n-heptane pan fire at 50–100 ft. (15–30m)
	Sensitivity Range	4 sensitivity ranges: Extreme, High, Medium, Low
	Field of view (IR detection)	90° Horizontal, 80° Vertical
	Time Delay	0-30 seconds
	Built in Test	Automatic and Manual
ELECTRICAL SPECIFICATIONS	**Operating Voltage**	24 VDC nominal (18-32 VDC)
	Current Consumption	Standby: 120mA 180mA all systems in operation (including window heater)
	Electrical Entries	2x cable and conduit entries 3/4" NPT(F) or M25x1.5
	Wiring	14-17 AWG (2.5–1.0 mm²)
OUTPUTS	**Relays**	SPST volt-free contacts rated 2A at 30 VDC 3 relays: Alarm & Auxiliary – normally open; Fault – normally closed
	0-20mA (stepped) current output	3 wire and 4 wire (isolated) configurations (sink and source) HART® rev 7.0 (option available)
	Indication	Tri-color LED (Green, Yellow, Red)
	Modbus	RTU compatible on RS-485
MECHANICAL SPECIFICATIONS	**Size**	5.51 x 3.54 × 3.54" (140×90×90mm)
	Weight	Detector (Stainless Steel 316): 6.6 lbs. (3.0 kg) Tilt mount (Stainless Steel 316): 3.3 lbs. (1.5 kg)
ENVIRONMENTAL SPECIFICATIONS	**Temperature Range**	Operating: -67°F to +185°F (-55°C to +85°C) Storage: -67°F to +185°F (-55°C to +85°C)
	Humidity	Up to 99% (RH), non-condensing
	Ingress Protection	IP66 & 68 (2m, 24hr); NEMA 4X & 6P
APPROVALS	**ATEX**	ATEX: II 2 G D Ex db IIC T5 Gb or Ex db eb IIC T5 Gb and Ex tb IIIC T95°C Db -55°C<Ta<75°C Ex db IIC T4 Gb or Ex db eb IIC T4 Gb and Ex tb IIIC T105°C Db -55°C<Ta<85°C
	IECEx, INMETRO & PESO	Ex db IIC T5 Gb -50°C≤Ta≤75°C Ex db IIC T4 Gb -50°C≤Ta≤85°C
	FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 Class I, Zone 1, AEx/Ex db IIC T4 Gb T4 -50°C≤Ta≤85°C T5 -50°C≤Ta≤75°C
	EAC CU TR	1Ex d IIC T5 Gb or 1Ex de IIC T5 Gb and Ex tb IIIC T95°C Db -55°C≤Ta≤75°C 1Ex d IIC T4 Gb or 1Ex de IIC T4 Gb and Ex tb IIIC T105°C Db -55°C≤Ta≤85°C
	Performance	ANSI FM 3260 EN 54-10
	Functional safety	Certified SIL2 capable, per IEC 61508:2010 High & Low demand (option available)

ACCESSORIES	**Tilt mount, model FLS-TMO-S01**	**High vibration mounting bracket, model FLS-MIL-S01**
	Weather cover, model FLS-WCO-S01	**Flame simulator, model FLS-FSIM-UV-IR-KIT**
	2" & 3" pole mount adapter, model FLS-PMA-S23	**Airshield, model FLS-ASD-S01**
	Duct mount with window, model FLS-DMW-S01	**Duct mount for airshield, model FLS-DMX-S01**
WARRANTY	**5 years**	

FIRE & GAS DETECTION TECHNOLOGIES INC.

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave. Anaheim, CA 92807 USA
Tel: (+1) 714-671-8500 | support@fg-detection.com
Specifications subject to change without notice.

FlameSpec

FLS-FSIM

Flame Simulator Family



The FlameSpec Flame Simulator range provides fast and convenient detector verification in the field.

Introduction

Flame simulators are often used by industry to perform detector testing during commissioning and periodic system testing. FlameSpec simulators differ from many competing products because they test the active sensors and detection algorithms of the devices without using “bypass” techniques to trick the detector into responding.

The FSIM range is lightweight, simple to use and has a modern ergonomic design. Suitable for use in hazardous areas, the FSIM-IR3 has an extended trigger distance of up to 30 feet (10 meters) from the detector.

Three FSIM models are available, depending on the FlameSpec Detector to be tested, IR3, IR3-H2 and UV-IR.

Key Benefits

- Tests the active sensors and detection algorithms, without using “bypass” techniques.
  - No tricks, detector performance assured.
- Works from distance up to 30 feet (10 meters).
  - Reduces the need for scaffolding.
- Hazardous area use approved.
  - Hot work permits not needed required.
- Lightweight and simple to use.
  - More than 1,000 activations between charges.
- Includes carrying strap, protective storage case, battery charger and operating instructions.
- Easy to transport & supplied with everything needed.
- Complementary to FlameSpec Detector inbuilt test features.
  - Enables full end to end (loop) system test.

FIRE & GAS DETECTION TECHNOLOGIES INC.

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Tel: (+1) 714-671-8500 | support@fg-detection.com

Version: F300V0010.04 • Oct 2023

FlameSpec-FLS-FSIM

Flame Simulator Family

	Simulator Kits Part Nos	FLS-FSIM-IR3-KIT	FLS-FSIM-IR3-H2-KIT	FLS-FSIM-UV-IR-KIT
	Detector type	FLS-IR3[1] FLS-IR3-HD[1]	FLS-IR3-H2 FLS-IR3-H2-HD	FLS-UV-IR FLS-UV-IR-HD
OPERATION DISTANCES	**Detector Sensitivity**	ft. m	ft. m	ft. m
	Extreme	30 9.0	30 9.0	42.5 13.0
	High	20 6.0	20 6.0	26 8.0
	Medium	10 3.0	10 3.0	20 6.0
	Low	3.3[2] 1.0[2]	3.3[2] 1.0[2]	6.6 2.0
ELECTRICAL SPECIFICATIONS	**Operating Voltage nominal, V**	3.7	3.7	3.7
	Number of activations between charging	~1000	~1000	~50
	Battery Capacity, mAh	>3000	>3000	>3000
	Charging time, hours	up to 3	up to 3	up to 3
	Indication	3 Color LED (Green, Yellow, Red)		
	All Simulator Models			
MECHANICAL SPECIFICATIONS	**Size**	3.9 x 3.9 x 7.8" (100 x 100 x 200mm)		
	Weight	3.96 lbs. (1.8 kg)		
	Simulator Enclosure Material	Painted Aluminum LM25		
ENVIRONMENTAL SPECIFICATIONS	**Ingress Protection**	IP65 (NEMA 4X)		
	Humidity	up to 99% (RH), non-condensing		
	Operating temperature	Min: −4°F (−20°C) Max: +122°F (+50°C)		
APPROVALS	**Explosion proof**	ATEX Ex II 2 G Ex db ib op is IIC T6 Gb Ex II 2 D Ex tb ib op is IIIC T85°C Db -20°C<Ta<+50°C		
ACCESSORIES included in kits	**Carrying Case**	FLS-FSIM-CASE		
	Carrying Strap	FLS-FSIM-STRAP		
	Cover Tool	FLS-FSIM-TOOL		
	Allen Key	FLS-FSIM-ALLEN		
	Battery Charger	FLS-FSIM-CHRGR		
WARRANTY	**3 Years**			

[1]not CO2L variant
[2]with collimator removed

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Tel: (+1) 714-671-8500 | support@fg-detection.com

ITEM	Tag	950-GDZ-03101	: H2 GD FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001535	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX42	Gas/Smoke Detector

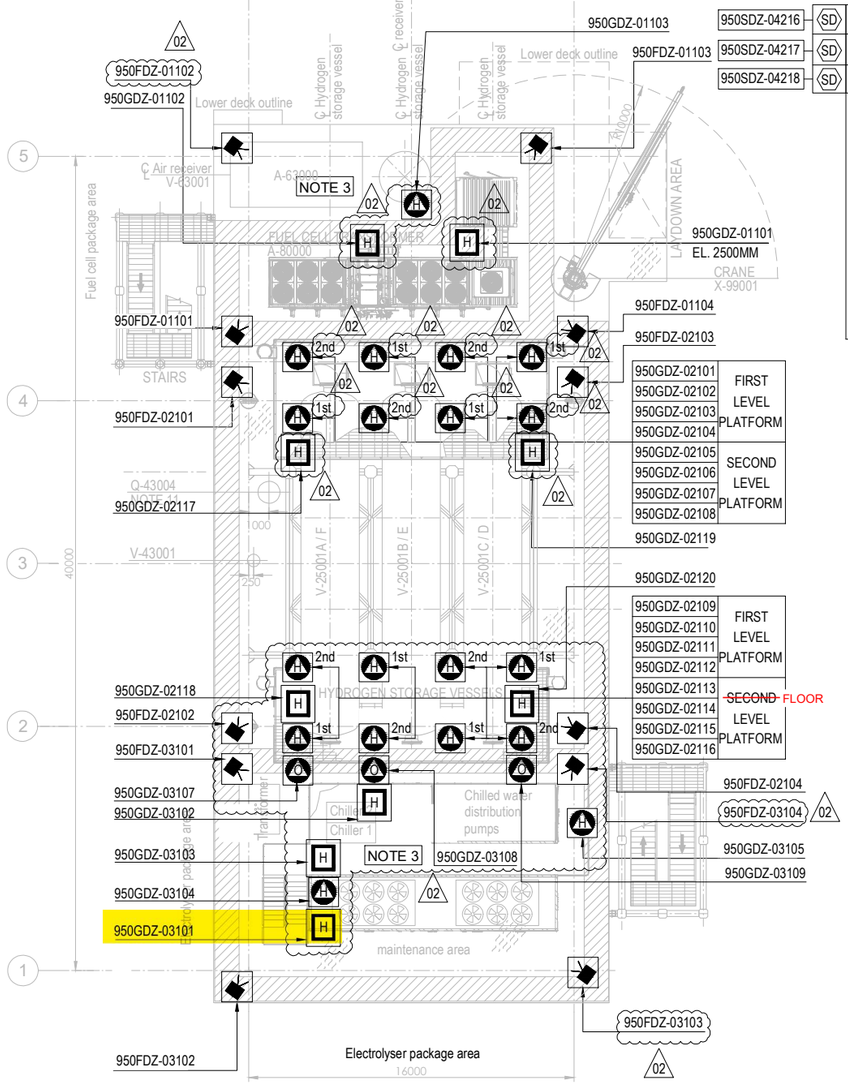
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to F&G detection layout drawings.	OK
4	Check test facility is installed.	OK
5	Check end of line resistors correctly fitted (where applicable).	NA
6	Check protective cap is installed.	OK
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	OK
9	Check accessibility conforms to specifications, with platforming where necessary.	OK
10	Check calibration certificate (where applicable).	NA
11	Check electrical connections.	OK
12	Check earthing connections.	OK
13	Dismantle and store sensor until installation just before Commissioning.	NA
14	If required produce Red Line Mark Up for "AS BUILT"	

Comments

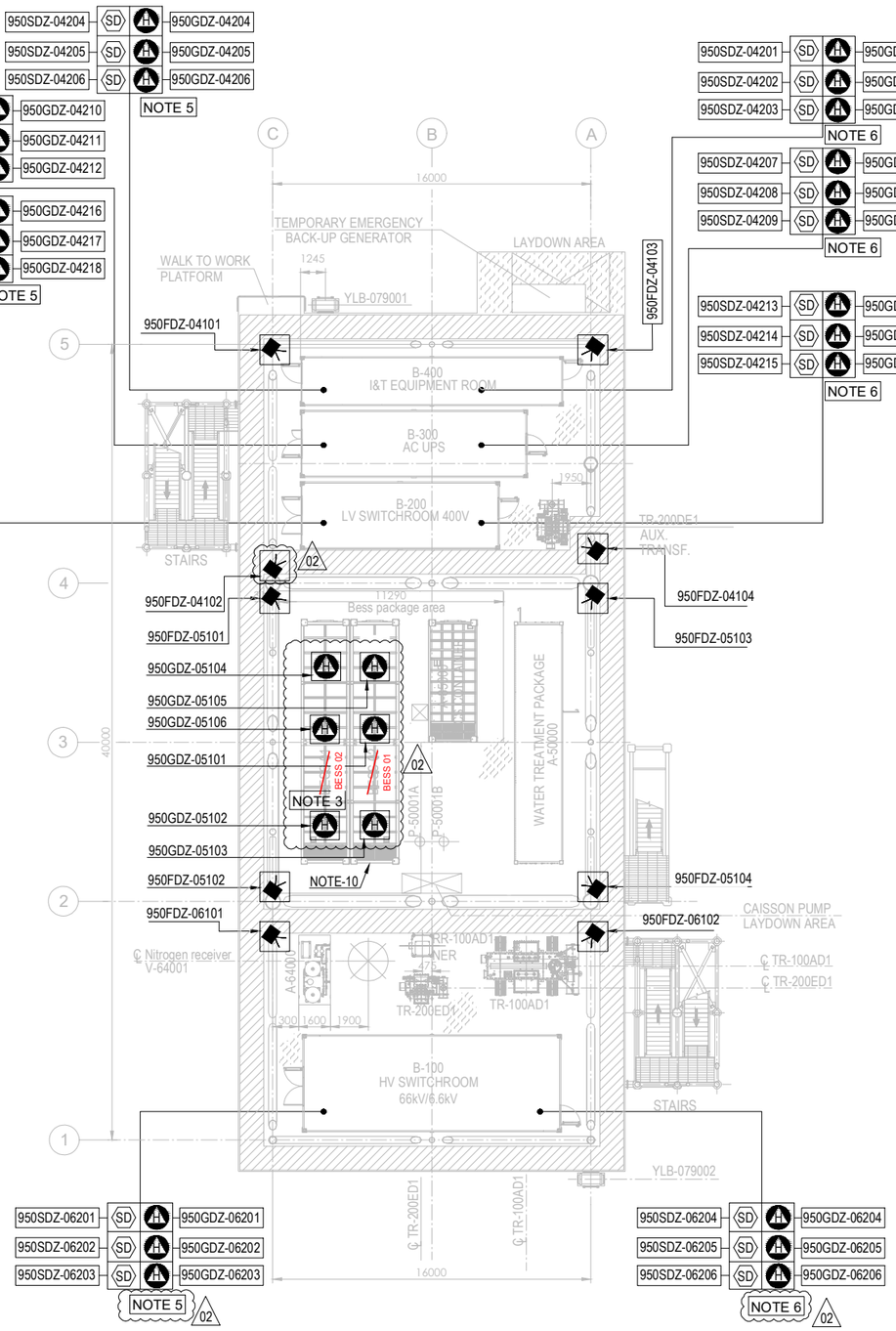
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-01-14	2025-01-14	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-14T08:46:05.834Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-14T17:06:22.462Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

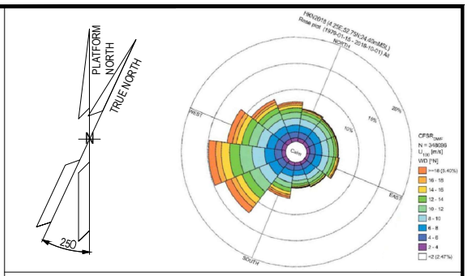


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_E	13/01/25	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS	CABLE	JUNCTION BOX TB-1	MULTICABLE	MARSHALLING CABINET TB-950-JE-03101
950-GDZ-03101 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 1, WH 2, BK 3, SH → TR1	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TR1 RD 1, WH 2, BK 3 → 950-GDZ-03101
950-GDZ-03102 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 4, WH 5, BK 6, SH → TR2		TR2 RD 4, WH 5, BK 6 → 950-GDZ-03102
950-GDZ-03103 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 7, WH 8, BK 9, SH → TR3		TR3 RD 7, WH 8, BK 9 → 950-GDZ-03103
950-GDZ-03104 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 10, WH 11, BK 12, SH → TR4		TR4 RD 10, WH 11, BK 12 → 950-GDZ-03104
950-GDZ-03105 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 13, WH 14, BK 15, SH → TR5		TR5 RD 13, WH 14, BK 15 → 950-GDZ-03105
950-GDZ-03107 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 16, WH 17, BK 18, SH → TR6		TR6 RD 16, WH 17, BK 18 → 950-GDZ-03107
950-GDZ-03108 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 19, WH 20, BK 21, SH → TR7		TR7 RD 19, WH 20, BK 21 → 950-GDZ-03108
950-GDZ-03109 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 22, WH 23, BK 24, SH → TR8		TR8 RD 22, WH 23, BK 24 → 950-GDZ-03109
		SPARE 25, 26, 27, SH → TR9		TR9 RD 25, WH 26, BK 27 → SPARE
		SPARE 28, 29, 30, SH → TR10		TR10 RD 28, WH 29, BK 30 → SPARE
		SPARE 31, 32, 33, SH → TR11		TR11 RD 31, WH 32, BK 33 → SPARE
		SPARE 34, 35, 36, SH → TR12		TR12 RD 34, WH 35, ~~BK~~ 36 → SPARE
		OS		Shield Bar, I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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

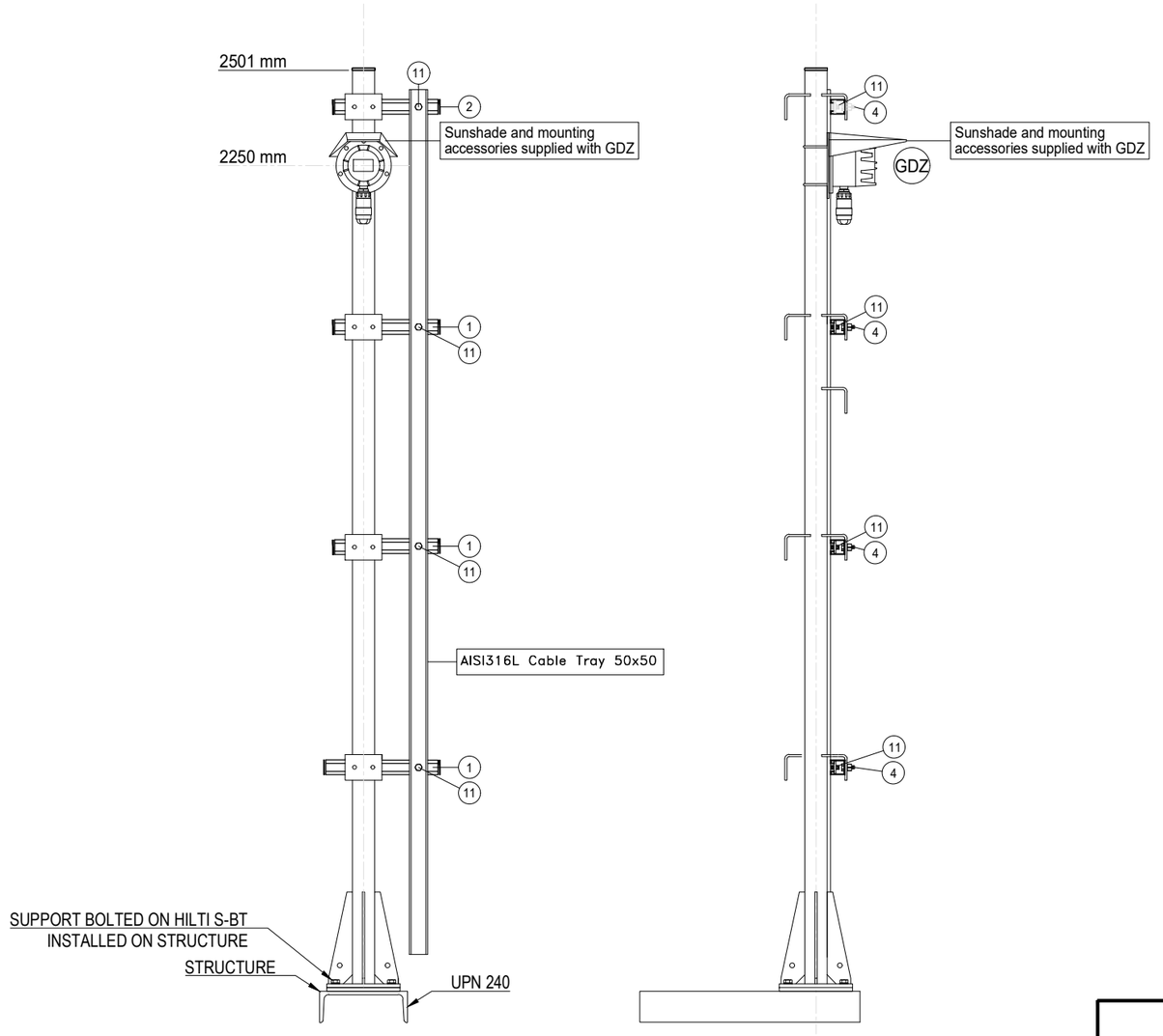
A3	DRAWING NO. 123A90-DDL-IN-DG-40016	SHEET 036	REV. 01

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

FGS-12

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	2m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	10
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	6

POLE	ITEM	DESCRIPTION	TAGNAME
1	GDZ	H2 GAS DETECTOR - ULTASONIC TYPE	950-GDZ-02119
2	GDZ	H2 GAS DETECTOR - ULTASONIC TYPE	950-GDZ-02120
3	GDZ	H2 GAS DETECTOR - ULTASONIC TYPE	950-GDZ-01101
4	GDZ	H2 GAS DETECTOR - ULTASONIC TYPE	950-GDZ-01102
5	GDZ	H2 GAS DETECTOR - ULTASONIC TYPE	950-GDZ-01103
6	GDZ	H2 GAS DETECTOR - ULTASONIC TYPE	950-GDZ-03101
7	GDZ	H2 GAS DETECTOR - ULTASONIC TYPE	950-GDZ-03103

1

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

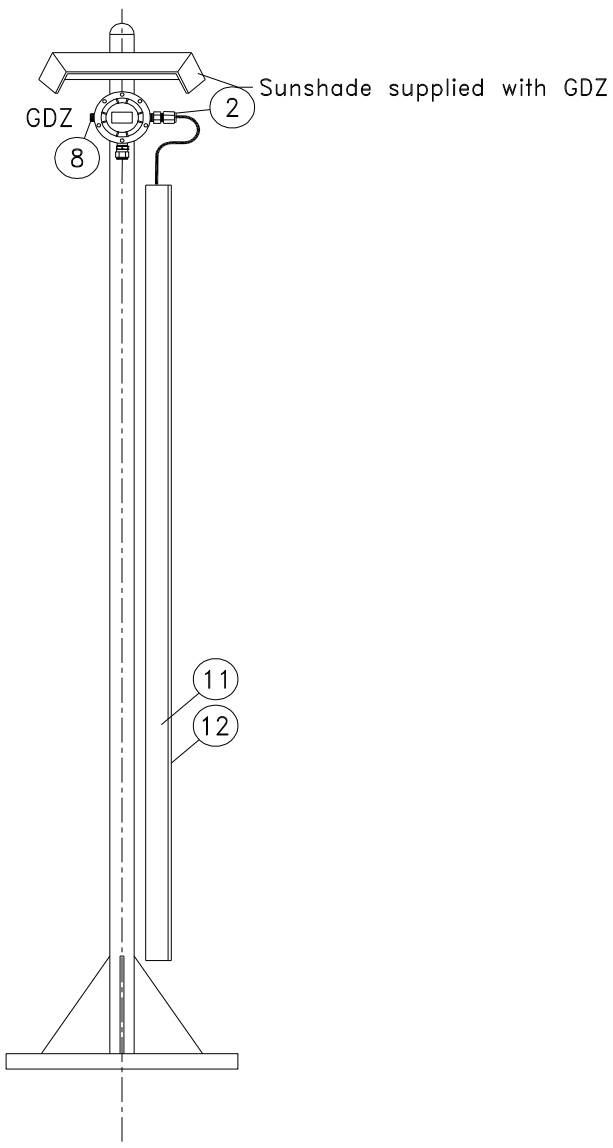
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 031	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02111
10	950-GDZ-03104
11	950-GDZ-03105
12	950-GDZ-03106
13	950-GDZ-03107
14	~~950-GDZ-03108~~ 950-GDZ-03102
15	950-GDZ-03109
16	950-GDZ-02117
17	950-GDZ-02119
18	950-GDZ-02120
19	950-GDZ-01101
20	950-GDZ-01102
21	950-GDZ-01103
22	950-GDZ-03101
23	950-GDZ-03103

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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

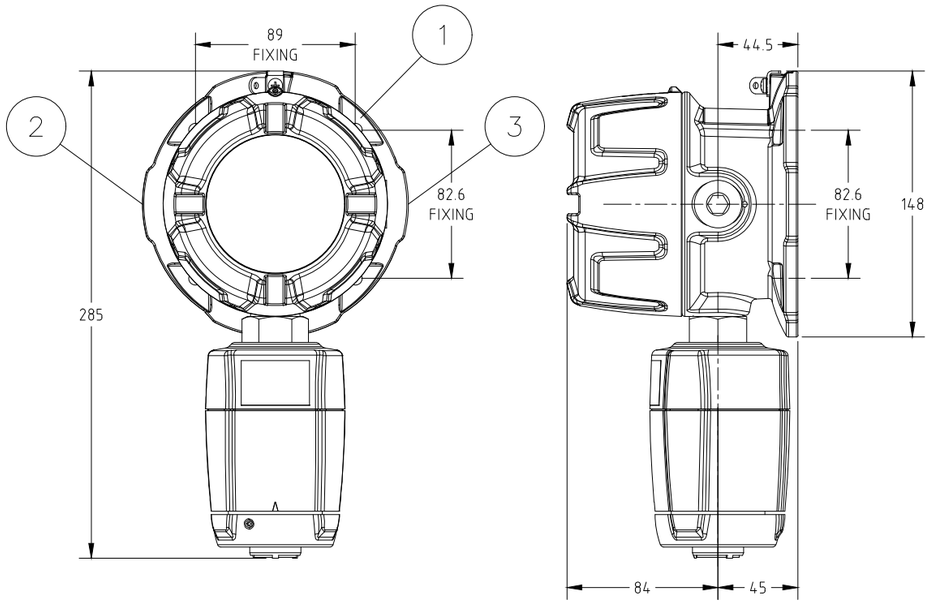
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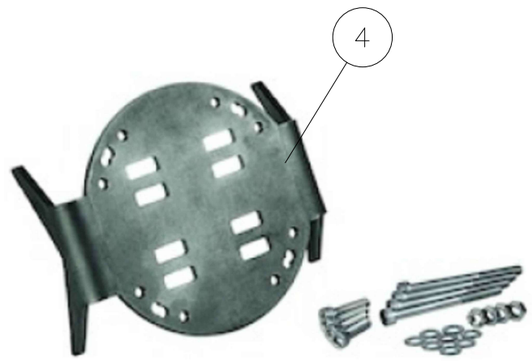
HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING

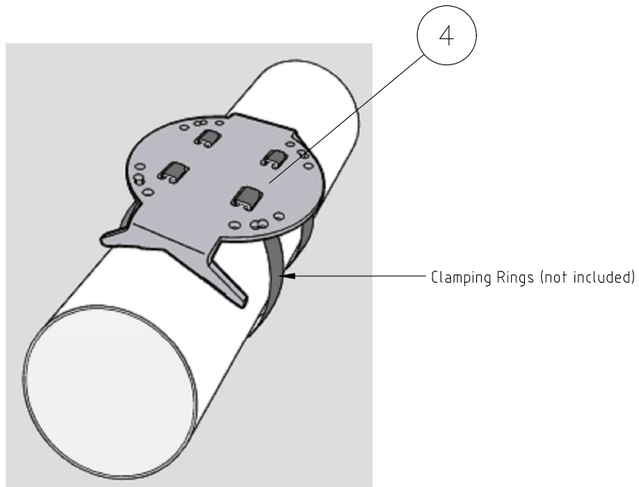
ITEM	DESCRIPTIONS	NR
1	Hydrogen Ultrasonic Leak Detector, DRÄGER Polytron 8900 UGLD d S 4-20/HART Relay	1
2	Reducer 3/4" NPT - M20 Ex d AISI 316	2
3	3/4" plug Ex d AISI 316	1
4	Pipe mount bracket kit Polytron 5000/8000 series, DRÄGER	1
5	Sun and weather protection kit Polytron, DRÄGER	1
6	Stainless Steel Name Plate	1
7		
8		
9		
10		

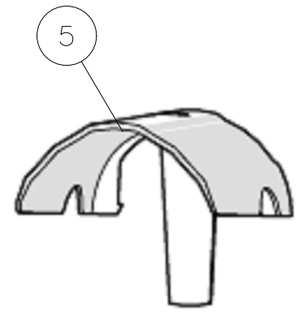
INSTALLATION QUANTITY

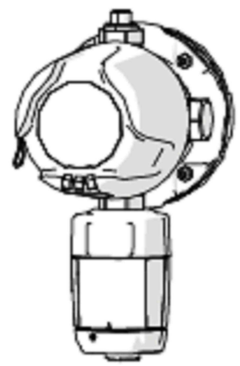
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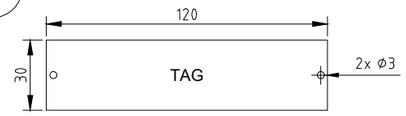






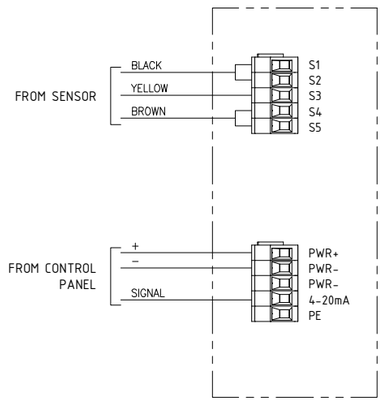
6

STAINLESS STEEL
NAME PLATE DETAILS



NOTE 5

WIRING



FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING

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

A3	DRAWING NO.	SHEET	REV.
	1724000821-IN-DA-00003	009	02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-GDZ-01101
2	950-GDZ-01102
3	950-GDZ-02117
4	950-GDZ-02118
5	950-GKDZ-02119
6	950-GDZ-02120
7	950-GDZ-03101
8	950-GDZ-03102
9	950-GDZ-03103

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING – TAG

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 010 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN ULTRASONIC LEAK DETECTORS

POS.	TAG NUMBER	SERVICE
1	950-GDZ-01101	H2 GD FZ-01 FUEL CELL PK AREA
2	950-GDZ-01102	H2 GD FZ-01 FUEL CELL PK AREA
3	950-GDZ-02117	H2 GD FZ-02 H2 STORAGE VESSELS AREA
4	950-GDZ-02118	H2 GD FZ-02 H2 STORAGE VESSELS AREA
5	950-GKDZ-02119	H2 GD FZ-02 H2 STORAGE VESSELS AREA
6	950-GDZ-02120	H2 GD FZ-02 H2 STORAGE VESSELS AREA
7	950-GDZ-03101	H2 GD FZ-03 ELECTROLYZER PK AREA
8	950-GDZ-03102	H2 GD FZ-03 ELECTROLYZER PK AREA
9	950-GDZ-03103	H2 GD FZ-03 ELECTROLYZER PK AREA

File: 1724000821-IN-DS-00004-02.xlsx
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Dräger Polytron® 8900 UGLD
Ultrasonic Gas Leak Detector

The Dräger Polytron® 8900 UGLD transmitter is an early warning area monitor for detecting high-pressure gas leaks in outdoor industrial process environments. Thanks to an ultrasonic acoustic sensor, it responds earlier than conventional gas detectors because it registers the sound of leaking gas instead of measuring the concentration of accumulated gas clouds. As gas escapes, leaks are immediately detected in the surrounding area, regardless of the wind direction.



Dräger. Technology for Life®

Benefits

Ultrasonic sensor technology – the early warning system for gas leaks

Typical gas detection systems used to monitor pressurised gas pipes or containers in industrial environments only detect a gas leak if the gas is in the immediate vicinity of the gas sensor. Environmental influences such as wind can delay or prevent a gas cloud from being detected by gas sensors. On the contrary, the Dräger Polytron 8900 UGLD is not affected by environmental factors and detects a high-pressure gas leak as soon as gas escapes. Effective early gas leak warnings can prevent unnecessary shutdowns, saving time and money.

A perfect complement to your gas detection system

The Dräger Polytron 8900 extends the Polytron 8000 series family with acoustic gas leak detection. All transmitters in this series have the same design and an identical user interface. A common user interface ensures that little training or maintenance is required for existing users. The Polytron 8900 UGLD perfectly complements existing flame and gas detection systems with reliable early gas leak warnings.

Delivers results that are easy to understand

For easy interpretation of results, the measured values on the display of the Polytron 8900 UGLD are shown from 0 to 100 percent of the full scale decibel sensitivity range. The ultrasound level is immediately displayed and transmitted without the use of difficult to interpret artificial intelligence. Alarms are configured at a specific level above a predetermined background noise level. Additionally, a time delay of up to 30 seconds can be set in the control system.

Can even detect gas leaks in loud industrial environments

Loud process areas generate noise which is mostly in the audible spectrum. Gas leaks from pressurized vessels above 10 bar generate both audible sound and inaudible ultrasound. Since Polytron 8900 is tuned to measure in the ultrasound spectrum, it can easily identify gas leaks with a leak rate of 100 g/sec in a 65 ft radius circle.

Robust design and fully-sealed sensor

The Polytron 8900 UGLD is an explosion-proof transmitter with a sensor housed in a galvanically-isolated, intrinsically-safe enclosure. The sensor is an ultrasonic microphone that is completely sealed in PVCC, making it impervious to water and dirt. It provides reliable readings without the need for an additional environmental protection baffle. Regular calibration is not necessary, but unlike some other UGLDs on the market, calibration is possible and easy. The expected lifespan of the ultrasonic sensor is more than 10 years.

Technical Data

Dräger Polytron® 8900 UGLD			
Type	Explosion proof / flameproof enclosed transmitter (“d”) or combined with increased safety (“d/e”)		
Gases	Flammable and toxic gases such as hydrogen, methane, ethylene, propane, CO_2, nitrogen and hydrogen sulphide		
Measurement ranges	0-100% equivalent to 55-110 dB; typical alarm setting 10% UGLD signal above background		
Display	Back-lit graphic LCD display; 3 status LEDs (green/yellow/red)		
Sensor Type	PVCC coated piezoelectric microphone with built-in automatic self-test sound generator		
Sensor Performance	Response Time	< 3 sec.	
	Minimum Pressure	> 2 bar (29 psi) Methane	
	Coverage Radius	6.5ft -65 ft depending on gas type, leak rate and background noise	
	Frequency Range	18 kHz - 80 kHz	
Electrical data	Analogue signal output	Normal operation	4 to 20 mA
		Maintenance	Constant 3.4 mA or
			4 mA ±1 mA
			1 Hz modulation; (adjustable)
		Fault	< 1,2 mA
	Digital signal output	HART®	
	Power supply	10 to 30 V DC, 3-wire	
	Power consumption	w/ relay, remote	100 mA at 24 V
	Relay specification	Two alarm relays and one error relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	

Environmental conditions (See sensor data sheet)	Temperature	-40 to 70°C (-40 to 158°F) with relays
	Pressure	700 to 1,300 mbar
	Humidity	0 to 100 % relative humidity
Housing	Transmitter housing	Stainless steel SS316L
	Sensor housing	Polyamide 6
	Housing protection type	NEMA 4X & 7, IP65/66/67
	Cable entry	Three ¾" NPT thread openings or M20 cable gland
	Dimensions (H × W × D)	11.02" x 5.90" x 5.12" inches
	Weight, approx.	11 lbs
Approvals	UL	Class I, Div 1, Groups A, B, C, D; Class I, Zone 1, Group IIC; T-Code T4
	CSA*	Class I, Div 1, Groups A, B, C, D; Class I, Zone 1, Group IIC; T-Code T4
	IECEx	Ex db [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40 / +70 °C Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40/ +70°C; “e” version;
	ATEX	II 2G Ex db [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40 / +70 °C II 2G Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40/+70°C; “e” version
	CE Markings	ATEX (Directive 2014/34/EU) Electromagnetic compatibility (Directive 2014/30/EU) Low voltage (Directive 2014/35/EU)
	Marine approval*	DNV-GL

Technical Data

	SIL 2	Certificate TÜV Süd

* Pending

Ordering Information

Dräger Polytron® 8900 UGLD	Approval code	Part number
Polytron® 8900 UGLD d S 4-20/HART® Relay Stainless Steel Ex d Housing with 4-20mA HART® output and 3 Relays	ETR 0521	83 28 030

Accessories		Part number
Magnetic Wand		45 44 101
Remote Sensing Head with wall mount kit		83 28 021
Connecting cable with plug for the Remote Sensing Head	5 m	83 23 305
	15 m	83 23 315
	30 m	83 23 330
UGLD Calibration and Bump Test Kit w/o Air Cylinder		83 28 042
Zero Air Gas Cylinder 103L for Calibration and Bump Test Kit		45 10 058
Pole Mount Kit		45 44 198
Polysoft Basic (one year license)		83 28 600
Polysoft Basic (Subscription – yearly fee)		83 28 601
IR Connection Kit (requires PolySoft)		45 44 197

HART® is a registered trademark of the HART Communication Foundation.

ITEM	Tag	950-GDZ-03103	: H2 GD FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001537	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX42	Gas/Smoke Detector

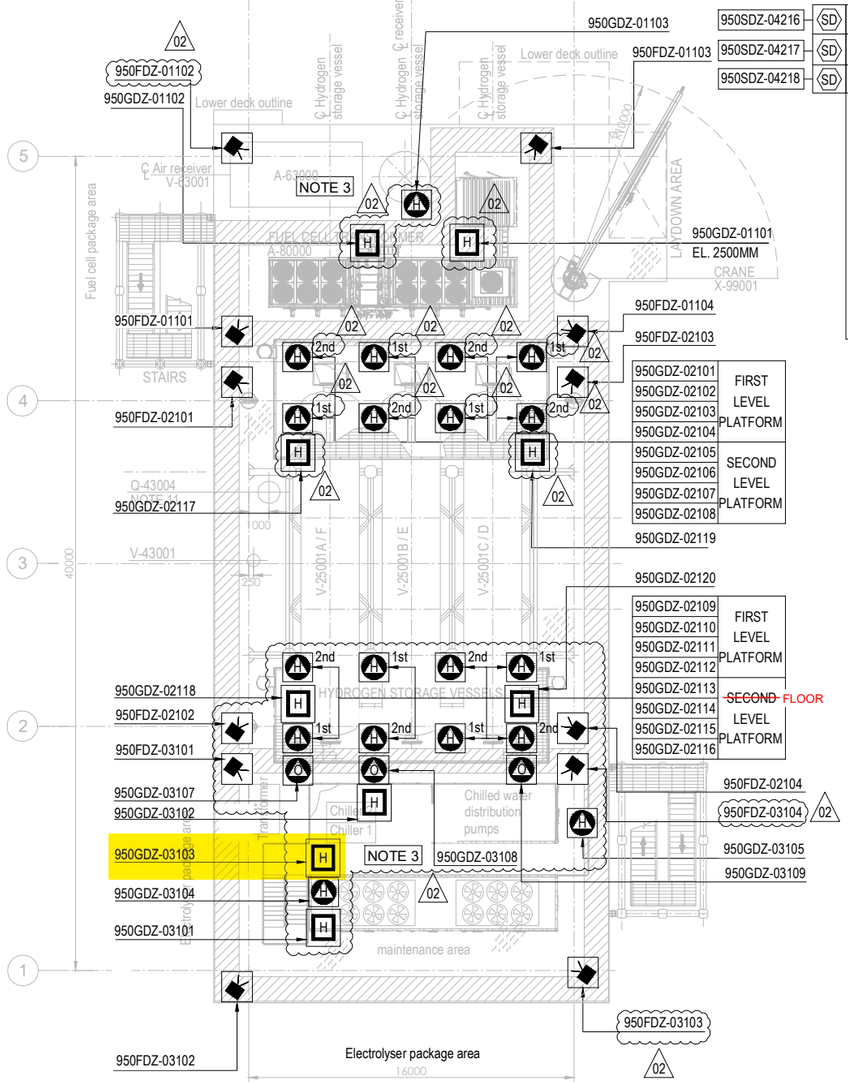
1	Check for mechanical damage.	PL
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to F&G detection layout drawings.	OK
4	Check test facility is installed.	OK
5	Check end of line resistors correctly fitted (where applicable).	NA
6	Check protective cap is installed.	OK
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	PL
9	Check accessibility conforms to specifications, with platforming where necessary.	OK
10	Check calibration certificate (where applicable).	NA
11	Check electrical connections.	OK
12	Check earthing connections.	PL
13	Dismantle and store sensor until installation just before Commissioning.	NA
14	If required produce Red Line Mark Up for "AS BUILT"	

Comments

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-01-13	2025-01-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-13T09:00:39.645Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-13T17:38:59.868Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



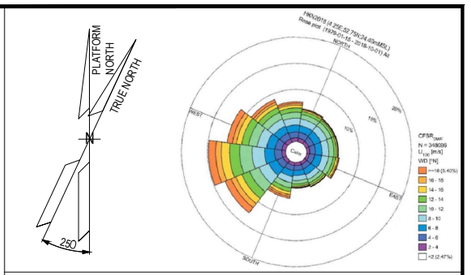
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS		JUNCTION BOX 950-JE-03101 TB-1		MULTICABLE No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003 TB-950-JE-03101	
950-GDZ-03101 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 1, WH 2, BK 3	TR1	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TR1 RD 1, WH 2, BK 3	950-GDZ-03101
950-GDZ-03102 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 4, WH 5, BK 6	TR2		TR2 RD 4, WH 5, BK 6	950-GDZ-03102
950-GDZ-03103 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 7, WH 8, BK 9	TR3		TR3 RD 7, WH 8, BK 9	950-GDZ-03103
950-GDZ-03104 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 10, WH 11, BK 12	TR4		TR4 RD 10, WH 11, BK 12	950-GDZ-03104
950-GDZ-03105 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 13, WH 14, BK 15	TR5		TR5 RD 13, WH 14, BK 15	950-GDZ-03105
950-GDZ-03107 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 16, WH 17, BK 18	TR6		TR6 RD 16, WH 17, BK 18	950-GDZ-03107
950-GDZ-03108 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 19, WH 20, BK 21	TR7		TR7 RD 19, WH 20, BK 21	950-GDZ-03108
950-GDZ-03109 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 22, WH 23, BK 24	TR8		TR8 RD 22, WH 23, BK 24	950-GDZ-03109
		SPARE 25, 26, 27	TR9		TR9 RD 25, WH 26, BK 27	SPARE
		SPARE 28, 29, 30	TR10		TR10 RD 28, WH 29, BK 30	SPARE
		SPARE 31, 32, 33	TR11		TR11 RD 31, WH 32, BK 33	SPARE
		SPARE 34, 35, 36	TR12		TR12 RD 34, WH 35, ~~BK~~ 36	SPARE
		SH, OS			Shield Bar, I.E.	

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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

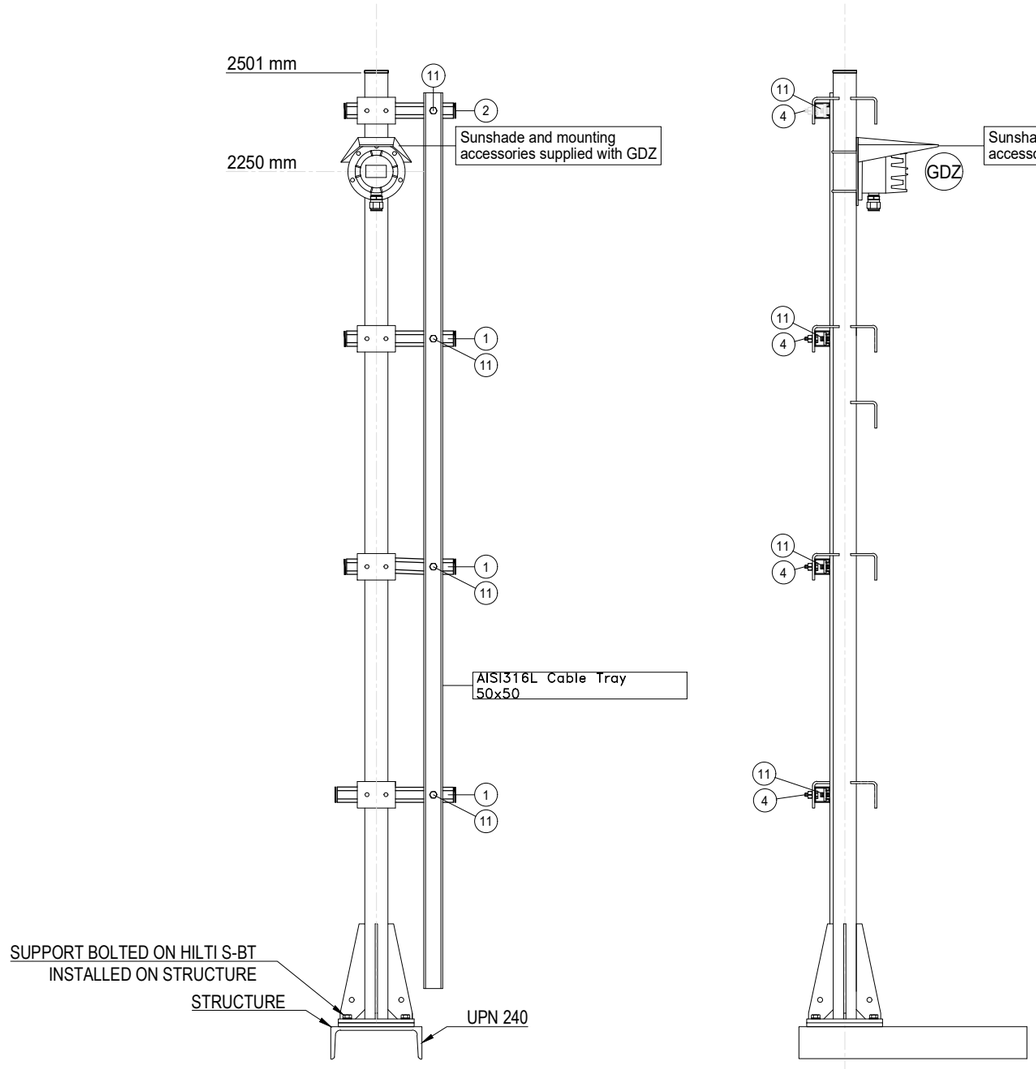
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	036	01

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

FGS-10

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	2m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	8
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02101
2	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02102
3	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02103
4	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02104
5	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02105
6	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02106
7	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02107
8	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02108
9	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02111
10	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03103
11	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03104
12	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03105

1

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

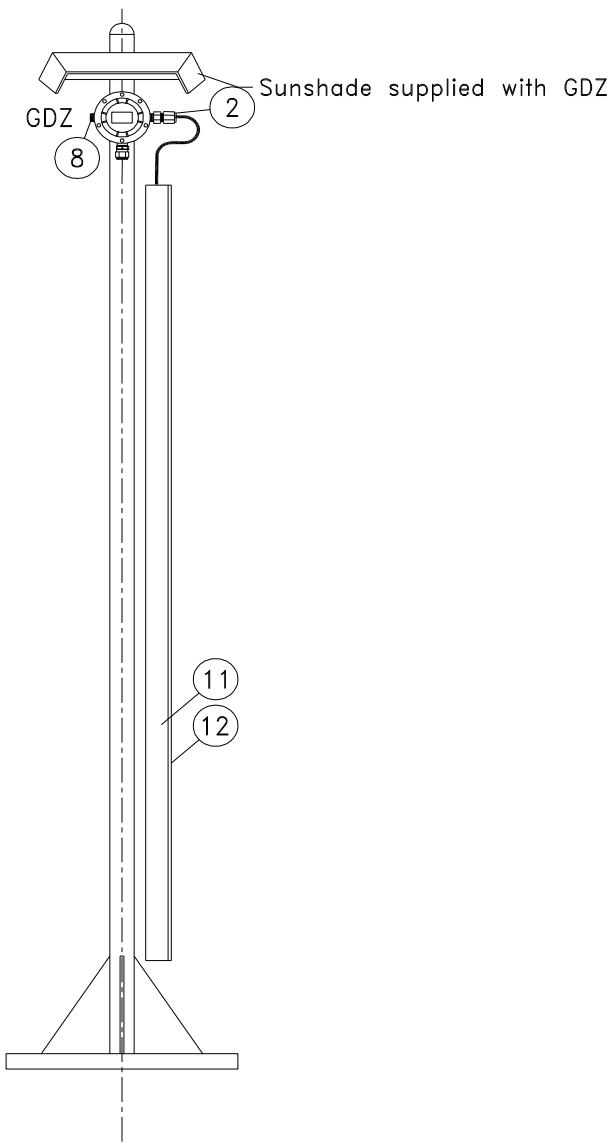
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 029	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02111
10	950-GDZ-03104
11	950-GDZ-03105
12	950-GDZ-03106
13	950-GDZ-03107
14	~~950-GDZ-03108~~ 950-GDZ-03102
15	950-GDZ-03109
16	950-GDZ-02117
17	950-GDZ-02119
18	950-GDZ-02120
19	950-GDZ-01101
20	950-GDZ-01102
21	950-GDZ-01103
22	950-GDZ-03101
23	950-GDZ-03103

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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

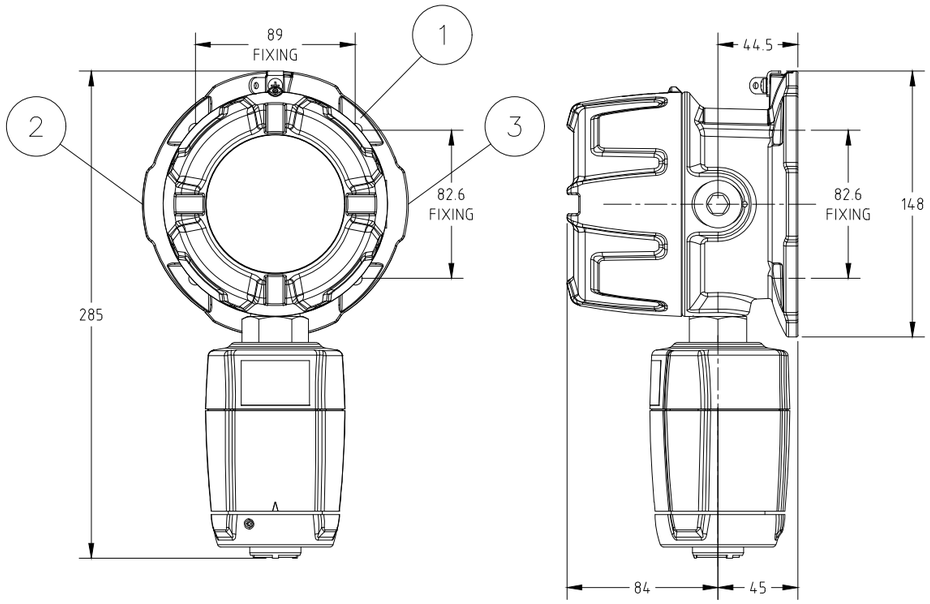
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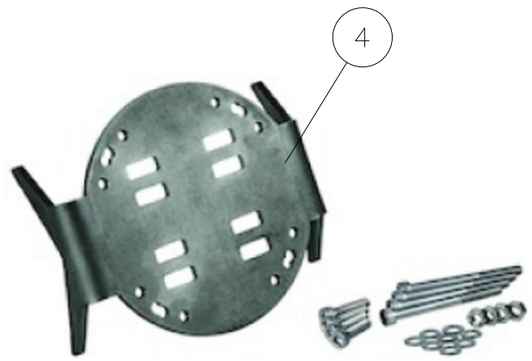
HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING

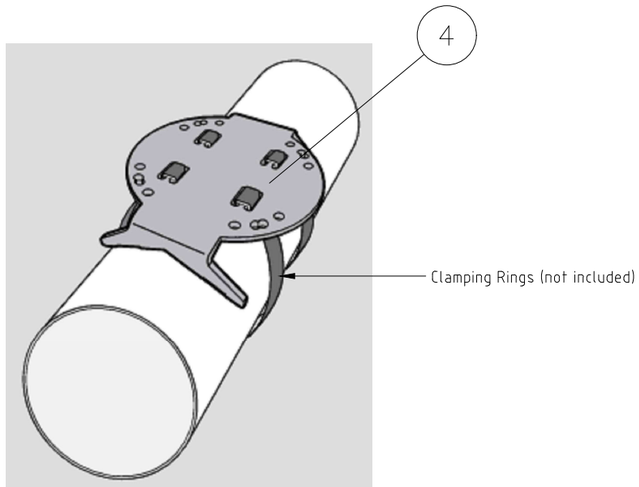
ITEM	DESCRIPTIONS	NR
1	Hydrogen Ultrasonic Leak Detector, DRÄGER Polytron 8900 UGLD d S 4-20/HART Relay	1
2	Reducer 3/4" NPT - M20 Ex d AISI 316	2
3	3/4" plug Ex d AISI 316	1
4	Pipe mount bracket kit Polytron 5000/8000 series, DRÄGER	1
5	Sun and weather protection kit Polytron, DRÄGER	1
6	Stainless Steel Name Plate	1
7		
8		
9		
10		

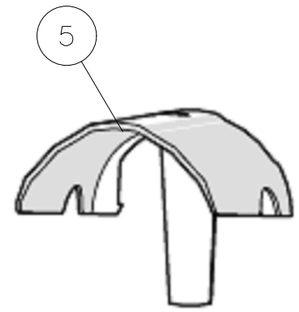
INSTALLATION QUANTITY

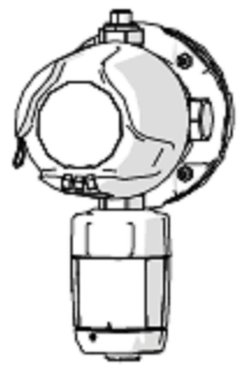
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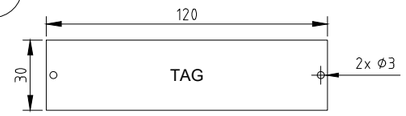






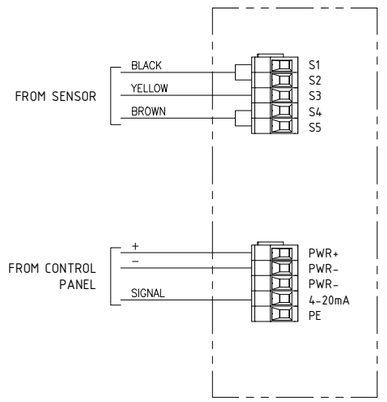
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STAINLESS STEEL
NAME PLATE DETAILS



NOTE 5

WIRING



FORES ENGINEERING

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ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING

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

A3	DRAWING NO.	SHEET	REV.
	1724000821-IN-DA-00003	009	02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-GDZ-01101
2	950-GDZ-01102
3	950-GDZ-02117
4	950-GDZ-02118
5	950-GKDZ-02119
6	950-GDZ-02120
7	950-GDZ-03101
8	950-GDZ-03102
9	950-GDZ-03103

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN ULTRASONIC LEAK DETECTOR / PIPE MOUNTING – TAG

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 010 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN ULTRASONIC LEAK DETECTORS

POS.	TAG NUMBER	SERVICE
1	950-GDZ-01101	H2 GD FZ-01 FUEL CELL PK AREA
2	950-GDZ-01102	H2 GD FZ-01 FUEL CELL PK AREA
3	950-GDZ-02117	H2 GD FZ-02 H2 STORAGE VESSELS AREA
4	950-GDZ-02118	H2 GD FZ-02 H2 STORAGE VESSELS AREA
5	950-GKDZ-02119	H2 GD FZ-02 H2 STORAGE VESSELS AREA
6	950-GDZ-02120	H2 GD FZ-02 H2 STORAGE VESSELS AREA
7	950-GDZ-03101	H2 GD FZ-03 ELECTROLYZER PK AREA
8	950-GDZ-03102	H2 GD FZ-03 ELECTROLYZER PK AREA
9	950-GDZ-03103	H2 GD FZ-03 ELECTROLYZER PK AREA

File: 1724000821-IN-DS-00004-02.xlsx
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Dräger Polytron® 8900 UGLD
Ultrasonic Gas Leak Detector

The Dräger Polytron® 8900 UGLD transmitter is an early warning area monitor for detecting high-pressure gas leaks in outdoor industrial process environments. Thanks to an ultrasonic acoustic sensor, it responds earlier than conventional gas detectors because it registers the sound of leaking gas instead of measuring the concentration of accumulated gas clouds. As gas escapes, leaks are immediately detected in the surrounding area, regardless of the wind direction.



Dräger. Technology for Life®

Benefits

Ultrasonic sensor technology – the early warning system for gas leaks

Typical gas detection systems used to monitor pressurised gas pipes or containers in industrial environments only detect a gas leak if the gas is in the immediate vicinity of the gas sensor. Environmental influences such as wind can delay or prevent a gas cloud from being detected by gas sensors. On the contrary, the Dräger Polytron 8900 UGLD is not affected by environmental factors and detects a high-pressure gas leak as soon as gas escapes. Effective early gas leak warnings can prevent unnecessary shutdowns, saving time and money.

A perfect complement to your gas detection system

The Dräger Polytron 8900 extends the Polytron 8000 series family with acoustic gas leak detection. All transmitters in this series have the same design and an identical user interface. A common user interface ensures that little training or maintenance is required for existing users. The Polytron 8900 UGLD perfectly complements existing flame and gas detection systems with reliable early gas leak warnings.

Delivers results that are easy to understand

For easy interpretation of results, the measured values on the display of the Polytron 8900 UGLD are shown from 0 to 100 percent of the full scale decibel sensitivity range. The ultrasound level is immediately displayed and transmitted without the use of difficult to interpret artificial intelligence. Alarms are configured at a specific level above a predetermined background noise level. Additionally, a time delay of up to 30 seconds can be set in the control system.

Can even detect gas leaks in loud industrial environments

Loud process areas generate noise which is mostly in the audible spectrum. Gas leaks from pressurized vessels above 10 bar generate both audible sound and inaudible ultrasound. Since Polytron 8900 is tuned to measure in the ultrasound spectrum, it can easily identify gas leaks with a leak rate of 100 g/sec in a 65 ft radius circle.

Robust design and fully-sealed sensor

The Polytron 8900 UGLD is an explosion-proof transmitter with a sensor housed in a galvanically-isolated, intrinsically-safe enclosure. The sensor is an ultrasonic microphone that is completely sealed in PVCC, making it impervious to water and dirt. It provides reliable readings without the need for an additional environmental protection baffle. Regular calibration is not necessary, but unlike some other UGLDs on the market, calibration is possible and easy. The expected lifespan of the ultrasonic sensor is more than 10 years.

Technical Data

Dräger Polytron® 8900 UGLD			
Type	Explosion proof / flameproof enclosed transmitter (“d”) or combined with increased safety (“d/e”)		
Gases	Flammable and toxic gases such as hydrogen, methane, ethylene, propane, CO_2, nitrogen and hydrogen sulphide		
Measurement ranges	0-100% equivalent to 55-110 dB; typical alarm setting 10% UGLD signal above background		
Display	Back-lit graphic LCD display; 3 status LEDs (green/yellow/red)		
Sensor Type	PVCC coated piezoelectric microphone with built-in automatic self-test sound generator		
Sensor Performance	Response Time	< 3 sec.	
	Minimum Pressure	> 2 bar (29 psi) Methane	
	Coverage Radius	6.5ft -65 ft depending on gas type, leak rate and background noise	
	Frequency Range	18 kHz - 80 kHz	
Electrical data	Analogue signal output	Normal operation	4 to 20 mA
		Maintenance	Constant 3.4 mA or
			4 mA ±1 mA
			1 Hz modulation; (adjustable)
		Fault	< 1,2 mA
	Digital signal output	HART®	
	Power supply	10 to 30 V DC, 3-wire	
	Power consumption	w/ relay, remote	100 mA at 24 V
	Relay specification	Two alarm relays and one error relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	

Environmental conditions (See sensor data sheet)	Temperature	-40 to 70°C (-40 to 158°F) with relays
	Pressure	700 to 1,300 mbar
	Humidity	0 to 100 % relative humidity
Housing	Transmitter housing	Stainless steel SS316L
	Sensor housing	Polyamide 6
	Housing protection type	NEMA 4X & 7, IP65/66/67
	Cable entry	Three ¾" NPT thread openings or M20 cable gland
	Dimensions (H × W × D)	11.02" x 5.90" x 5.12" inches
	Weight, approx.	11 lbs
Approvals	UL	Class I, Div 1, Groups A, B, C, D; Class I, Zone 1, Group IIC; T-Code T4
	CSA*	Class I, Div 1, Groups A, B, C, D; Class I, Zone 1, Group IIC; T-Code T4
	IECEx	Ex db [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40 / +70 °C Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40/ +70°C; “e” version;
	ATEX	II 2G Ex db [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40 / +70 °C II 2G Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +40/+70°C; “e” version
	CE Markings	ATEX (Directive 2014/34/EU) Electromagnetic compatibility (Directive 2014/30/EU) Low voltage (Directive 2014/35/EU)
	Marine approval*	DNV-GL

Technical Data

	SIL 2	Certificate TÜV Süd

* Pending

Ordering Information

Dräger Polytron® 8900 UGLD	Approval code	Part number
Polytron® 8900 UGLD d S 4-20/HART® Relay Stainless Steel Ex d Housing with 4-20mA HART® output and 3 Relays	ETR 0521	83 28 030

Accessories		Part number
Magnetic Wand		45 44 101
Remote Sensing Head with wall mount kit		83 28 021
Connecting cable with plug for the Remote Sensing Head	5 m	83 23 305
	15 m	83 23 315
	30 m	83 23 330
UGLD Calibration and Bump Test Kit w/o Air Cylinder		83 28 042
Zero Air Gas Cylinder 103L for Calibration and Bump Test Kit		45 10 058
Pole Mount Kit		45 44 198
Polysoft Basic (one year license)		83 28 600
Polysoft Basic (Subscription – yearly fee)		83 28 601
IR Connection Kit (requires PolySoft)		45 44 197

HART® is a registered trademark of the HART Communication Foundation.

ITEM	Tag	950-GDZ-03104	: H2 GD FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001538	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX42	Gas/Smoke Detector

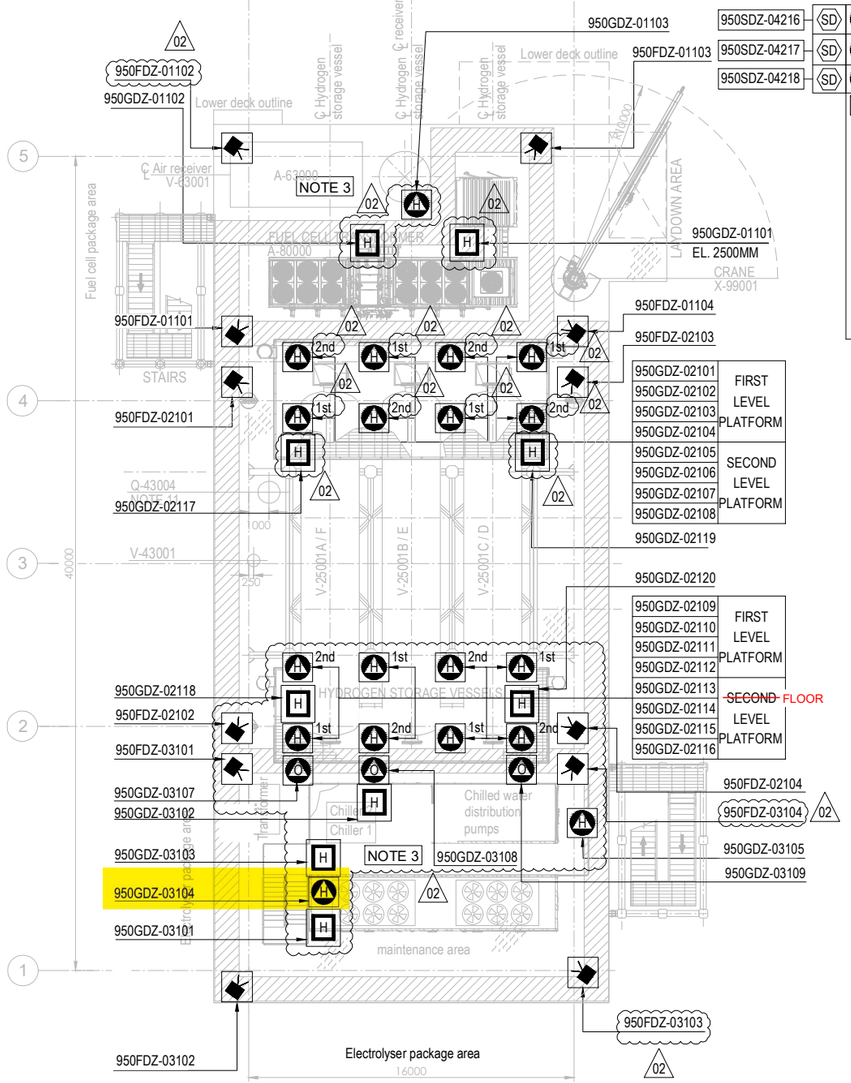
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to F&G detection layout drawings.	OK
4	Check test facility is installed.	OK
5	Check end of line resistors correctly fitted (where applicable).	NA
6	Check protective cap is installed.	OK
7	Check identification (tag number, tag plates).	OK
8	Check supporting and protection against vibrations.	OK
9	Check accessibility conforms to specifications, with platforming where necessary.	OK
10	Check calibration certificate (where applicable).	NA
11	Check electrical connections.	OK
12	Check earthing connections.	OK
13	Dismantle and store sensor until installation just before Commissioning.	NA
14	If required produce Red Line Mark Up for "AS BUILT"	

Comments

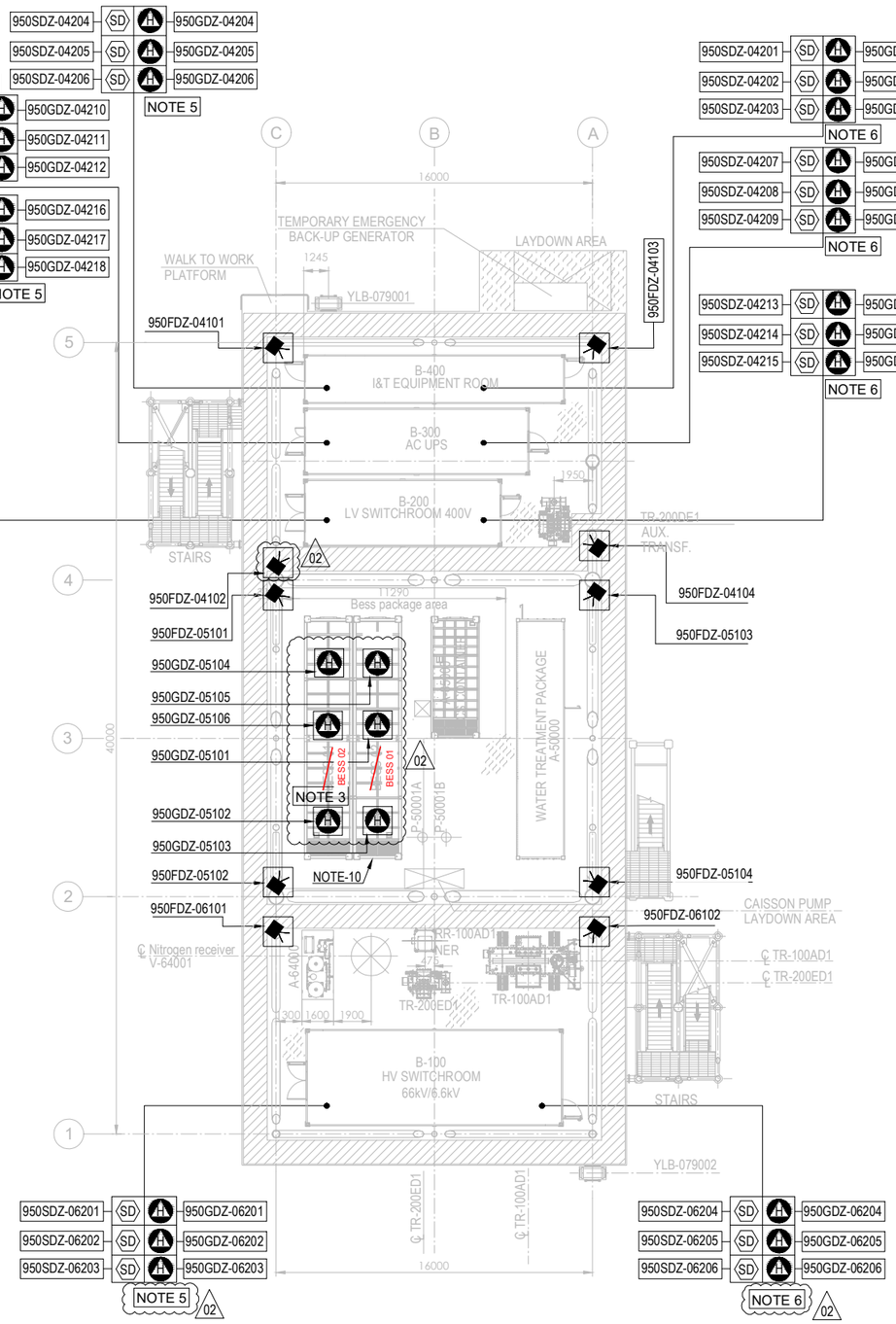
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Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-01-14	2025-01-14	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-14T08:46:35.882Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-14T17:42:59.549Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

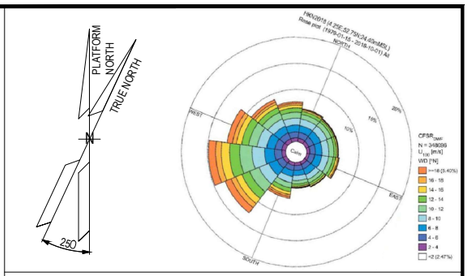


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_E	13/01/25	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

950-GDZ-03101	C-950-GDZ-03101/950-JE-03101	3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03102	C-950-GDZ-03102/950-JE-03101	3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03103	C-950-GDZ-03103/950-JE-03101	3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03104	C-950-GDZ-03104/950-JE-03101	3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03105	C-950-GDZ-03105/950-JE-03101	3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03107	C-950-GDZ-03107/950-JE-03101	3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03108	C-950-GDZ-03108/950-JE-031001	3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2
950-GDZ-03109	C-950-GDZ-03109/950-JE-031001	3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	NOTE-2

TB-1

1	TR1	
2		
3		
SH		
4	TR2	
5		
6		
SH		
7	TR3	
8		
9		
SH		
10	TR4	
11		
12		
SH		
13	TR5	
14		
15		
SH		
16	TR6	
17		
18		
SH		
19	TR7	
20		
21		
SH		
22	TR8	
23		
24		
SH		
25	TR9	SPARE
26		
27		
SH		
28	TR10	SPARE
29		
30		
SH		
31	TR11	SPARE
32		
33		
SH		
34	TR12	SPARE
35		
36		
SH		
OS		

950-JE-03101/B400-FGS-003

~~950-JE-03101/B400-FGS-002~~

12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03101

1	TR1	950-GDZ-03101
2		
3		
4	TR2	950-GDZ-03102
5		
6		
7	TR3	950-GDZ-03103
8		
9		
10	TR4	950-GDZ-03104
11		
12		
13	TR5	950-GDZ-03105
14		
15		
16	TR6	950-GDZ-03107
17		
18		
19	TR7	950-GDZ-03108
20		
21		
22	TR8	950-GDZ-03109
23		
24		
25	TR9	SPARE
26		
27		
28	TR10	SPARE
29		
30		
31	TR11	SPARE
32		
33		
34	TR12	SPARE
35		
36		

Shield Bar

I.E.

Shield Bar

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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

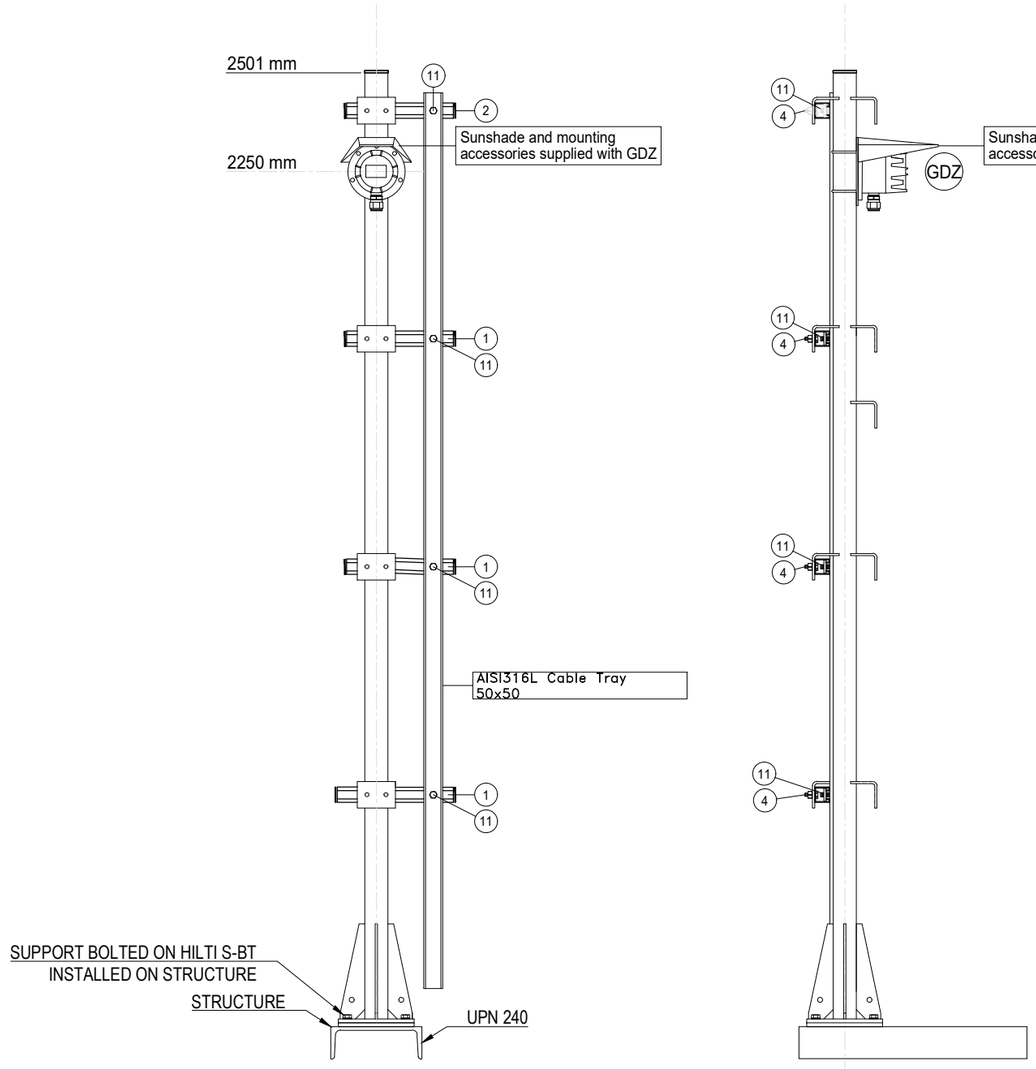
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	036	01

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

FGS-10

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	2m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	8
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02101
2	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02102
3	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02103
4	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02104
5	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02105
6	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02106
7	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02107
8	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02108
9	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02111
10	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03103
11	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03104
12	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03105

1

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

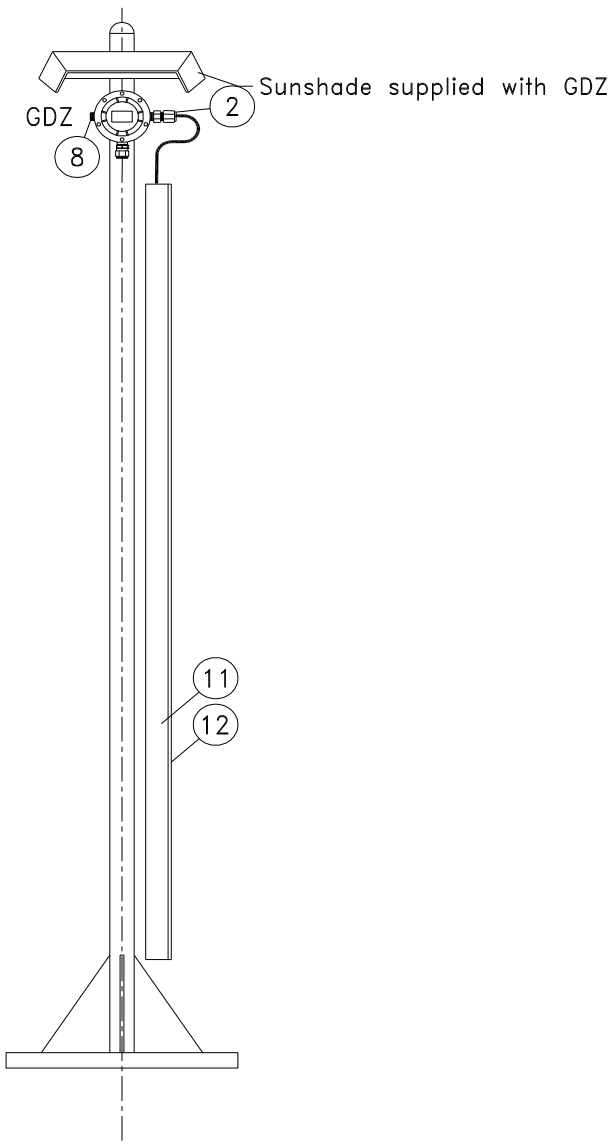
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 029	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02111
10	950-GDZ-03104
11	950-GDZ-03105
12	950-GDZ-03106
13	950-GDZ-03107
14	~~950-GDZ-03108~~ 950-GDZ-03102
15	950-GDZ-03109
16	950-GDZ-02117
17	950-GDZ-02119
18	950-GDZ-02120
19	950-GDZ-01101
20	950-GDZ-01102
21	950-GDZ-01103
22	950-GDZ-03101
23	950-GDZ-03103

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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

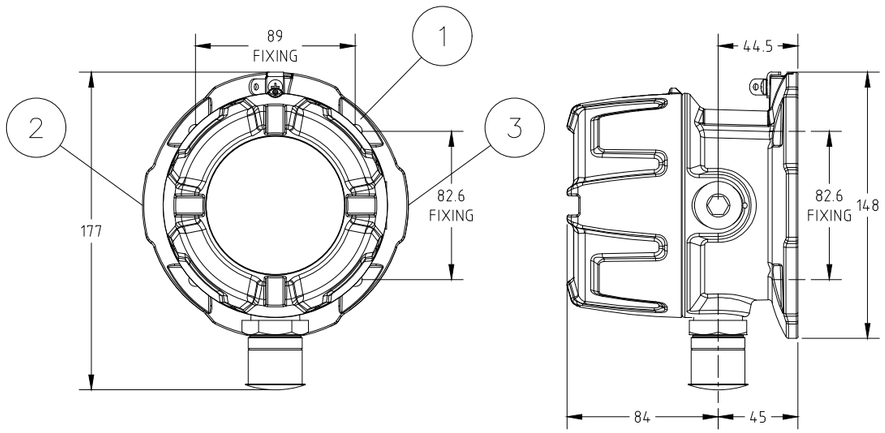
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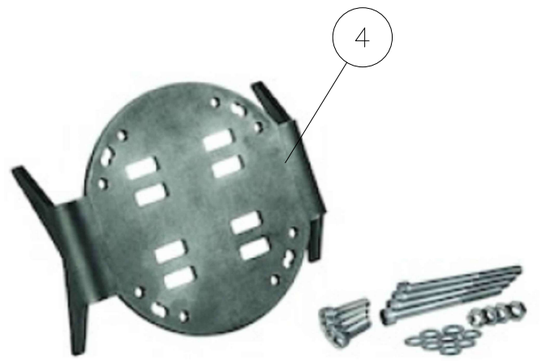
HYDROGEN POINT DETECTOR / PIPE MOUNTING

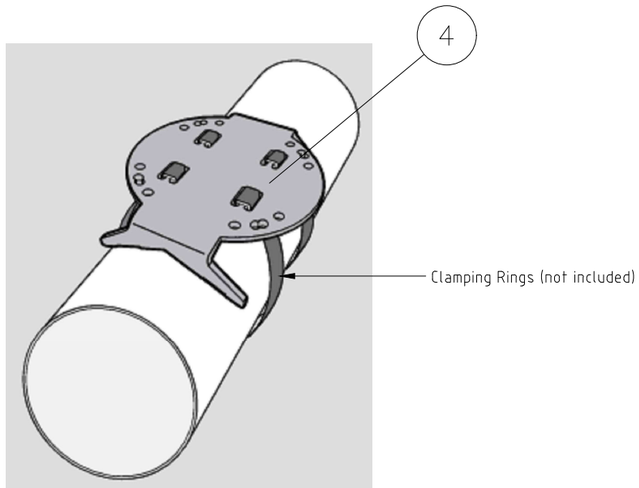
ITEM	DESCRIPTIONS	NR
1	Hydrogen point detector, DRÄGER Polytron 8200 CAT DQ d S 4-20/HART	1
2	Reducer 3/4" NPT - M20 Ex d AISI 316	2
3	3/4" plug Ex d AISI 316	1
4	Pipe mount bracket kit Polytron 5000/8000 series, DRÄGER	1
5	Sun and weather protection kit Polytron, DRÄGER	1
6	Stainless Steel Name Plate	1
7		
8		
9		
10		

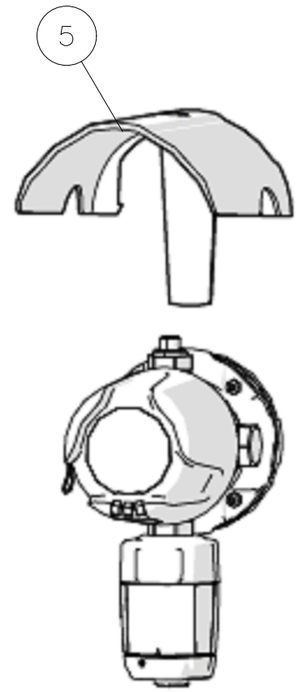
INSTALLATION QUANTITY

25

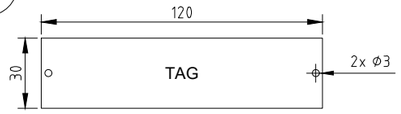






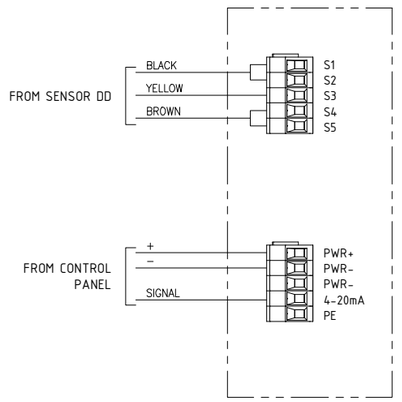


6 STAINLESS STEEL NAME PLATE DETAILS



NOTE 5

WIRING



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN POINT DETECTOR / PIPE MOUNTING

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 005

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN POINT DETECTOR / PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02109
10	950-GDZ-02110
11	950-GDZ-02111
12	950-GDZ-02112
13	950-GDZ-02113
14	950-GDZ-02114
15	950-GDZ-02115
16	950-GDZ-02116
17	950-GDZ-05101
18	950-GDZ-05102
19	950-GDZ-05103
20	950-GDZ-05104
21	950-GDZ-05105
22	950-GDZ-05106
23	950-GDZ-03104
24	950-GDZ-03105
25	950-GDZ-03106

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN POINT DETECTOR / PIPE MOUNTING – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 006

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN POINT DETECTORS

POS.	TAG NUMBER	SERVICE
1	950-GDZ-02101	H2 GD FZ-02 H2 STORAGE VESSELS AREA
2	950-GDZ-02102	H2 GD FZ-02 H2 STORAGE VESSELS AREA
3	950-GDZ-02103	H2 GD FZ-02 H2 STORAGE VESSELS AREA
4	950-GDZ-02104	H2 GD FZ-02 H2 STORAGE VESSELS AREA
5	950-GDZ-02105	H2 GD FZ-02 H2 STORAGE VESSELS AREA
6	950-GDZ-02106	H2 GD FZ-02 H2 STORAGE VESSELS AREA
7	950-GDZ-02107	H2 GD FZ-02 H2 STORAGE VESSELS AREA
8	950-GDZ-02108	H2 GD FZ-02 H2 STORAGE VESSELS AREA
9	950-GDZ-02109	H2 GD FZ-02 H2 STORAGE VESSELS AREA
10	950-GDZ-02110	H2 GD FZ-02 H2 STORAGE VESSELS AREA
11	950-GDZ-02111	H2 GD FZ-02 H2 STORAGE VESSELS AREA
12	950-GDZ-02112	H2 GD FZ-02 H2 STORAGE VESSELS AREA
13	950-GDZ-02113	H2 GD FZ-02 H2 STORAGE VESSELS AREA
14	950-GDZ-02114	H2 GD FZ-02 H2 STORAGE VESSELS AREA
15	950-GDZ-02115	H2 GD FZ-02 H2 STORAGE VESSELS AREA
16	950-GDZ-02116	H2 GD FZ-02 H2 STORAGE VESSELS AREA
17	950-GDZ-04201	H2 GD FZ-04 B-400 HVAC AIR INTAKE
18	950-GDZ-04202	H2 GD FZ-04 B-400 HVAC AIR INTAKE
19	950-GDZ-04203	H2 GD FZ-04 B-400 HVAC AIR INTAKE
20	950-GDZ-04204	H2 GD FZ-04 B-400 AMBIENT
21	950-GDZ-04205	H2 GD FZ-04 B-400 AMBIENT
22	950-GDZ-04206	H2 GD FZ-04 B-400 AMBIENT
23	950-GDZ-04207	H2 GD FZ-04 B-300 HVAC AIR INTAKE
24	950-GDZ-04208	H2 GD FZ-04 B-300 HVAC AIR INTAKE
25	950-GDZ-04209	H2 GD FZ-04 B-300 HVAC AIR INTAKE
26	950-GDZ-04210	H2 GD FZ-04 B-300 AMBIENT
27	950-GDZ-04211	H2 GD FZ-04 B-300 AMBIENT
28	950-GDZ-04212	H2 GD FZ-04 B-300 AMBIENT
29	950-GDZ-04213	H2 GD FZ-04 B-200 HVAC AIR INTAKE
30	950-GDZ-04214	H2 GD FZ-04 B-200 HVAC AIR INTAKE
31	950-GDZ-04215	H2 GD FZ-04 B-200 HVAC AIR INTAKE
32	950-GDZ-04216	H2 GD FZ-04 B-200 AMBIENT
33	950-GDZ-04217	H2 GD FZ-04 B-200 AMBIENT
34	950-GDZ-04218	H2 GD FZ-04 B-200 AMBIENT
35	950-GDZ-05101	H2 GD FZ-05 BESS AREA
36	950-GDZ-05102	H2 GD FZ-05 BESS AREA
37	950-GDZ-05103	H2 GD FZ-05 BESS AREA
38	950-GDZ-05104	
39	950-GDZ-05105	
40	950-GDZ-05106	
41	950-GDZ-06201	H2 GD FZ-06 B-100 HVAC AIR INTAKE
42	950-GDZ-06202	H2 GD FZ-06 B-100 HVAC AIR INTAKE
43	950-GDZ-06203	H2 GD FZ-06 B-100 HVAC AIR INTAKE
44	950-GDZ-06204	H2 GD FZ-06 B-100 AMBIENT
45	950-GDZ-06205	H2 GD FZ-06 B-100 AMBIENT
46	950-GDZ-06206	H2 GD FZ-06 B-100 AMBIENT
47	950-GDZ-03104	H2 GD FZ-03 ELECTROLYZER PK AREA
48	950-GDZ-03105	H2 GD FZ-03 ELECTROLYZER PK AREA
49	950-GDZ-01103	H2 GD FZ-03 ELECTROLYZER PK AREA

File: 1724000821-IN-DS-00004-02.xlsx
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Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

The Dräger Polytron® 8200 CAT is an advanced explosion-proof transmitter for the detection of combustible gases in the lower explosion limit (LEL). It uses a catalytic bead DrägerSensor® Ex that will detect most flammable gases and vapors. In addition to a 3-wire 4 to 20-mA analog output with relays it also offers HART®, Modbus and Fieldbus protocols, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

The built-in DrägerSensor® Ex is based on the proven catalytic bead measuring principle. It has excellent long-term stability with outstanding poison resistance. And this is the reason for its durability. Due to the novel gas inlet opening, the sensor responds to gas in only a few seconds. This allows you to react immediately with countermeasures and prevent the development of a flammable atmosphere.

Easy device management via digital communication

The Dräger Polytron 8200 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8200 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information.

The Polytron 8200 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8200 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8200 features a Class I, Div. 1 rated explosion proof enclosure made from aluminium or stainless steel, making it suitable for a wide range of environmental conditions.

Make the impossible possible with the remote sensor

A remote explosion proof junction allows installation of the sensor up to 350' away from the transmitter in difficult to access areas. A permanently attached remote calibration adapter allows for remote bump testing or calibration from the Polytron display by using permanently attached tubing that takes the calibration gas to the sensor.

Technical Data

Dräger Polytron® 8200 CAT			
Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Flammable gases and vapors		
Measuring ranges	DQ	0 to 100 % LEL	
	LC	0 to 10 % LEL	
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	Accuracy/repeatability	Zero	≤ 1 % LEL
		Span	≤ 1 % LEL
		Long-term drift	≤ 3 % LEL after 6 months
	Response time	T50	< 7 seconds (methane)
		T90	< 13 seconds (methane)
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	DQ w/o relay, non-remote	105 mA at 24 V
		DQ w/ relay, remote	145 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 80 °C (-40 to 176 °F) without relay -40 to 70 °C (-40 to 158 °F) with relay- -50 to 85 °C (-122 to 185 °F) remote sensor	
	Pressure	23.6 to 38.4 inch Hg / 800 to 1,200 mbar	
	Humidity	5 to 95% r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Stainless steel 303	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D)	11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm	
	Weight, approx.	Aluminium	4.9 lbs / 2.2 kg
		SS316 L	8.8 lbs / 4.0 kg
Approvals*	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;	
	CE markings	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Shipping approvals (for DQ sensor only)	DNV GL, ABS, LR, CCS, RMRS	
	MED approval (for DQ sensor only)	Certificate No. MEDB0000411	

Technical Data

	DEKRA Performance approval (for DQ sensor only)	Certificate No. BVS 13 ATEX G 001 X
	SIL 2 certified by TUEV Sued	Certificate No. Z10 053474 0023

* All docking station versions are only ATEX/IECEx approved

Ordering Information

Dräger Polytron® 8200 CAT	Approval Code	Order Number
Dräger Polytron® 8200 CAT DQ d A 4-20/HART®	XTR 0410	83 44 439
Dräger Polytron® 8200 CAT DQ d A 4-20/HART® relay	XTR 0411	83 44 440
Dräger Polytron® 8200 CAT DQ d S 4-20/HART®	XTR 0510	83 44 448
Dräger Polytron® 8200 CAT DQ d S 4-20/HART® relay	XTR 0511	83 44 449
Dräger Polytron® 8xx0 Kit (Custom configuration e. g. LC sensor or bus communication)		83 44 800

Accessories		Order Number
Magnetic wand		45 44 101
Pipe mount bracket		45 44 198
Aluminum junction box for remote sensor ‘d’		45 44 099
Stainless steel junction box for remote sensor ‘d’		45 44 098
Duct mount kit		68 12 725
IR Connection Kit Polytron® 5000/8000		45 44 197
PolySoft licence (1 year)		83 28 600
PolySoft licence (subscription)		83 28 601
Splash guard		68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx		37 02 198
Gassing adapter	PE, w/o tubing	68 06 978
	PE incl. tubing	46 09 314
Calibration adapter Viton®		68 10 536
Process adapter (Stainless steel) for DQ		68 12 470
Process adapter (Stainless steel) for LC		68 12 465

HART® is a registered trademark of the HART Communication Foundation.
FOUNDATION fieldbus™ is a registered trademark of the Fieldbus Foundation™.
PROFIBUS® is a registered trademark of PROFIBUS and PROFINET International (PI).
PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.
Viton® is a registered trademark of the DuPont company.
Windows® is a registered trademark of Microsoft Corporation.

ITEM	Tag	950-GDZ-03105	: H2 GD FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001539	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX42	Gas/Smoke Detector

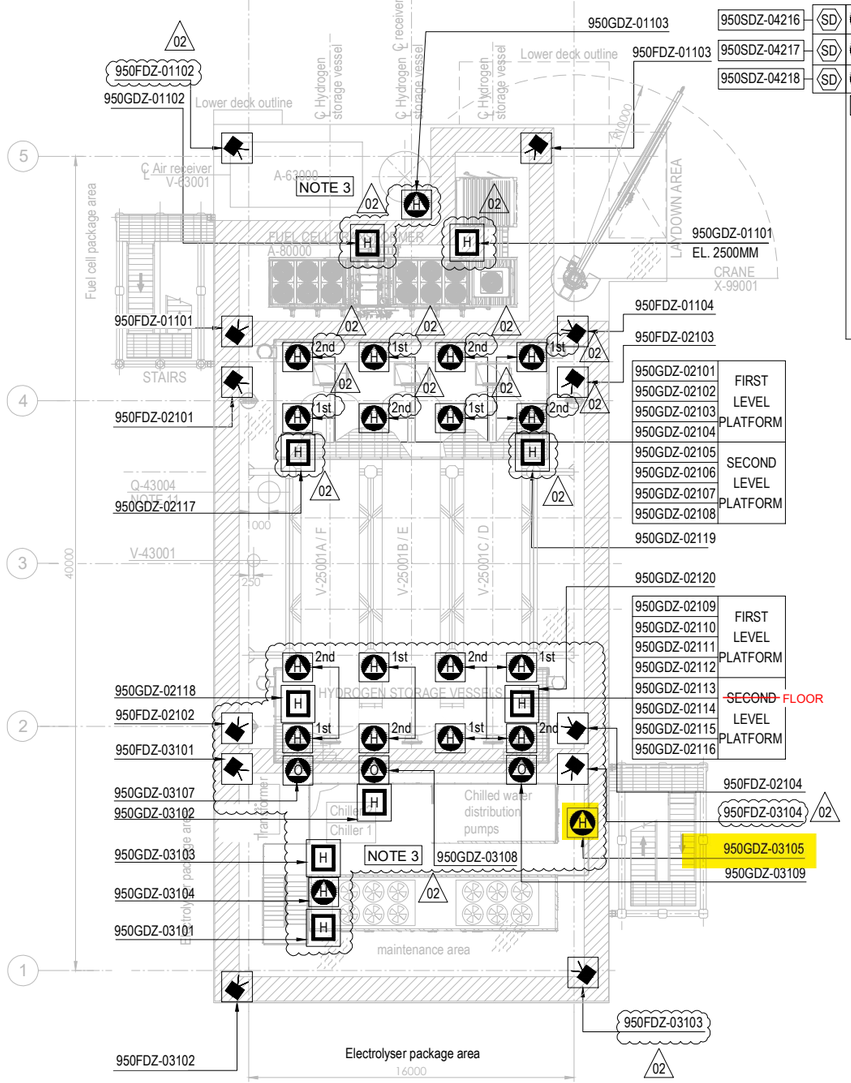
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to F&G detection layout drawings.	OK
4	Check test facility is installed.	OK
5	Check end of line resistors correctly fitted (where applicable).	NA
6	Check protective cap is installed.	OK
7	Check identification (tag number, tag plates).	OK
8	Check supporting and protection against vibrations.	OK
9	Check accessibility conforms to specifications, with platforming where necessary.	OK
10	Check calibration certificate (where applicable).	NA
11	Check electrical connections.	OK
12	Check earthing connections.	OK
13	Dismantle and store sensor until installation just before Commissioning.	NA
14	If required produce Red Line Mark Up for "AS BUILT"	

Comments

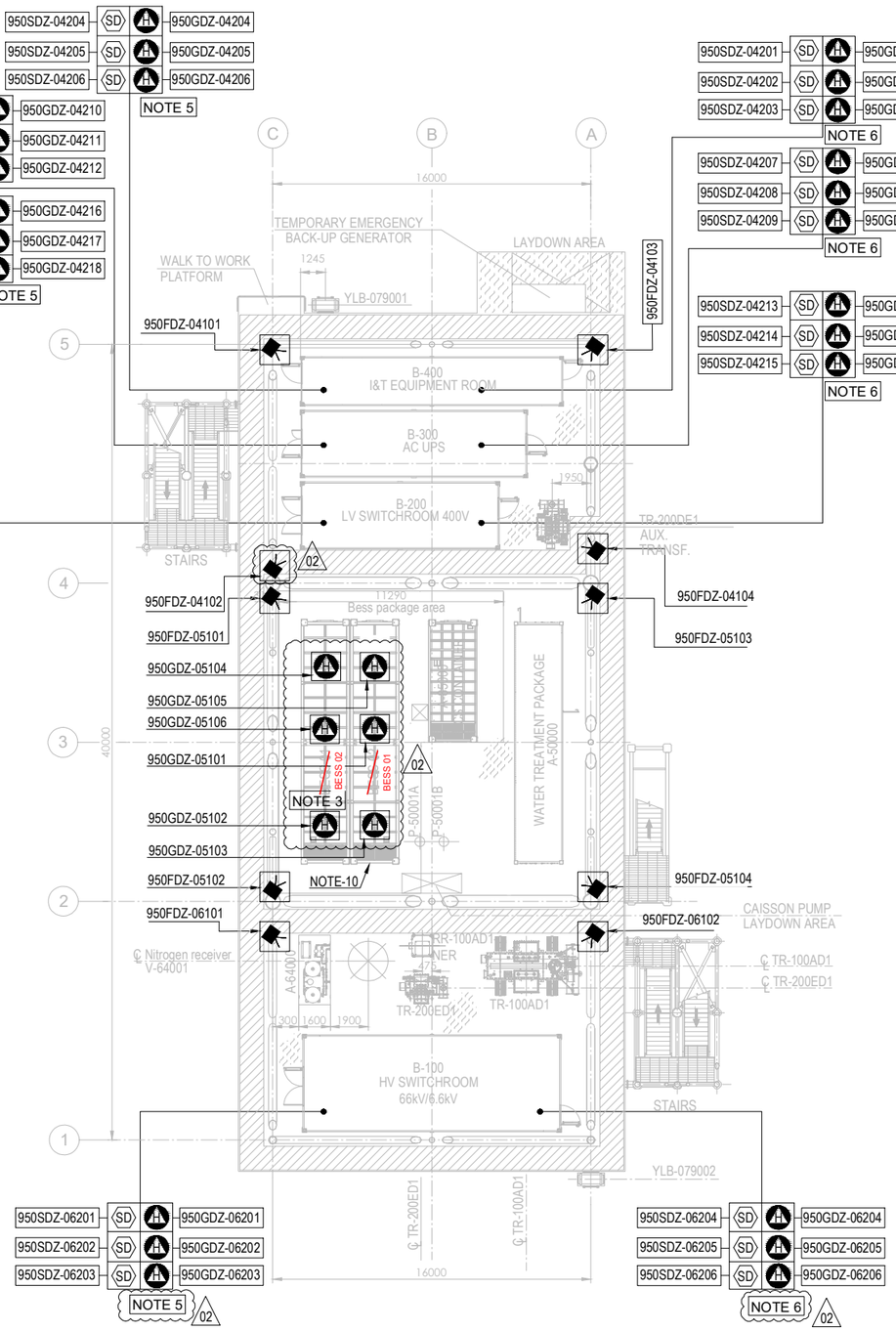
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-01-14	2025-01-14	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-14T08:46:51.917Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-14T17:46:18.728Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

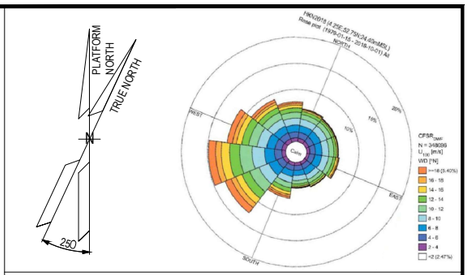


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_E	13/01/25	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS		JUNCTION BOX 950-JE-03101	MULTICABLE No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003
950-GDZ-03101 (PWR+, 4-20mA, PWR-) RD, WH, BK	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TB-1: 1 RD, 2 WH, 3 BK, SH	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TB-950-JE-03101: TR1 RD 1, WH 2, BK 3 — 950-GDZ-03101
950-GDZ-03102 (PWR+, 4-20mA, PWR-) RD, WH, BK	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	4 RD, 5 WH, 6 BK, SH		TR2 RD 4, WH 5, BK 6 — 950-GDZ-03102
950-GDZ-03103 (PWR+, 4-20mA, PWR-) RD, WH, BK	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	7 RD, 8 WH, 9 BK, SH		TR3 RD 7, WH 8, BK 9 — 950-GDZ-03103
950-GDZ-03104 (PWR+, 4-20mA, PWR-) RD, WH, BK	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS **NOTE-2**	10 RD, 11 WH, 12 BK, SH		TR4 RD 10, WH 11, BK 12 — 950-GDZ-03104
950-GDZ-03105 (PWR+, 4-20mA, PWR-) RD, WH, BK	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS **NOTE-2**	13 RD, 14 WH, 15 BK, SH		TR5 RD 13, WH 14, BK 15 — 950-GDZ-03105
950-GDZ-03107 (PWR+, 4-20mA, PWR-) RD, WH, BK	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS **NOTE-2**	16 RD, 17 WH, 18 BK, SH		TR6 RD 16, WH 17, BK 18 — 950-GDZ-03107
950-GDZ-03108 (PWR+, 4-20mA, PWR-) RD, WH, BK	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	19 RD, 20 WH, 21 BK, SH		TR7 RD 19, WH 20, BK 21 — 950-GDZ-03108
950-GDZ-03109 (PWR+, 4-20mA, PWR-) RD, WH, BK	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	22 RD, 23 WH, 24 BK, SH		TR8 RD 22, WH 23, BK 24 — 950-GDZ-03109
		SPARE 25 RD, 26 WH, 27 BK, SH		TR9 RD 25, WH 26, BK 27 — SPARE
		SPARE 28 RD, 29 WH, 30 BK, SH		TR10 RD 28, WH 29, BK 30 — SPARE
		SPARE 31 RD, 32 WH, 33 BK, SH		TR11 RD 31, WH 32, BK 33 — SPARE
		SPARE 34 RD, 35 WH, 36 BK, SH		TR12 RD 34, WH 35, ~~BK~~ 36 — SPARE
		OS		Shield Bar, I.E.

Shield Bar

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

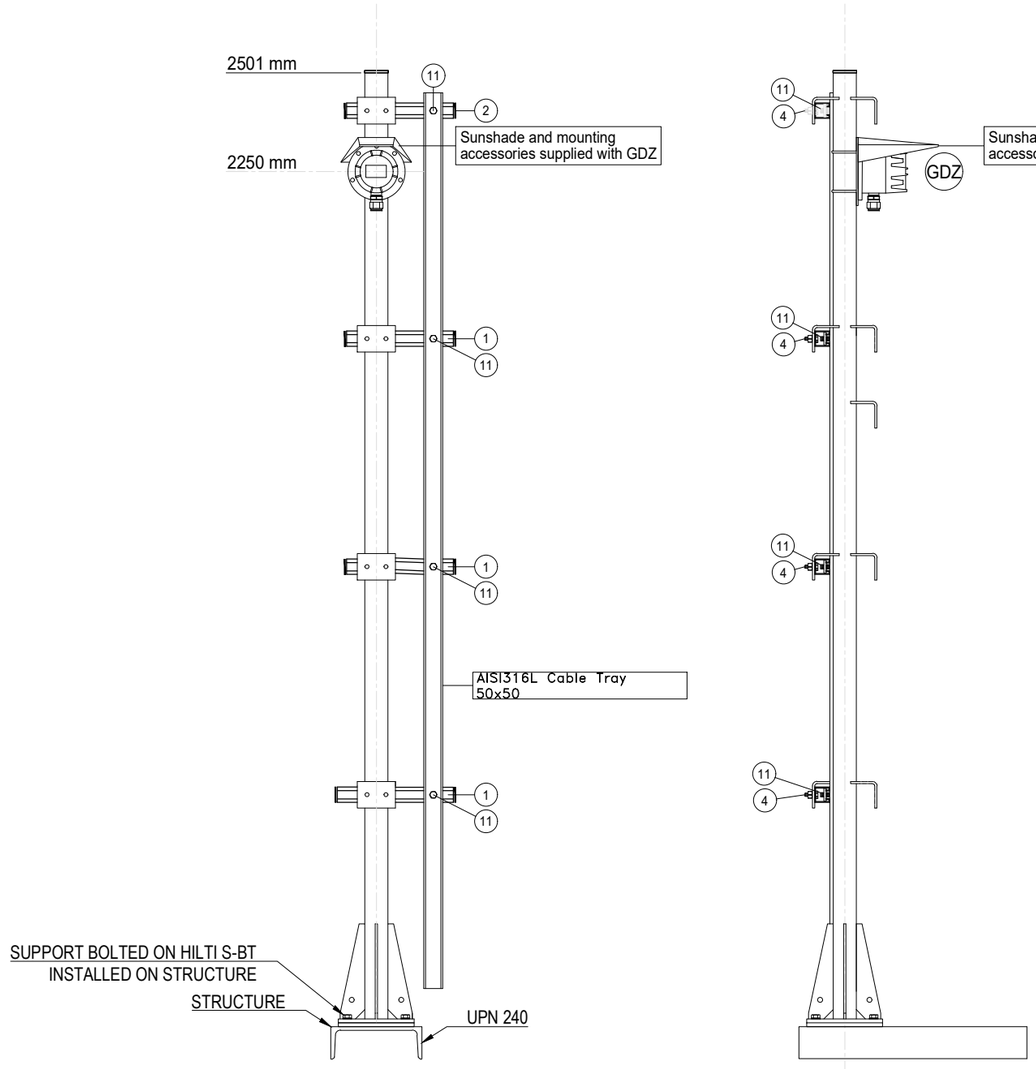
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DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40016	SHEET 036	REV. 01

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

FGS-10

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	2m
2	LDPE PLUG FOR U-CHANNEL 41x41	8
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	8
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02101
2	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02102
3	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02103
4	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02104
5	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02105
6	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02106
7	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02107
8	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02108
9	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-02111
10	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03103
11	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03104
12	GDZ	H2 GAS DETECTOR - CAT TYPE	950-GDZ-03105

1

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_I	20/12/24	V.Ramponi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

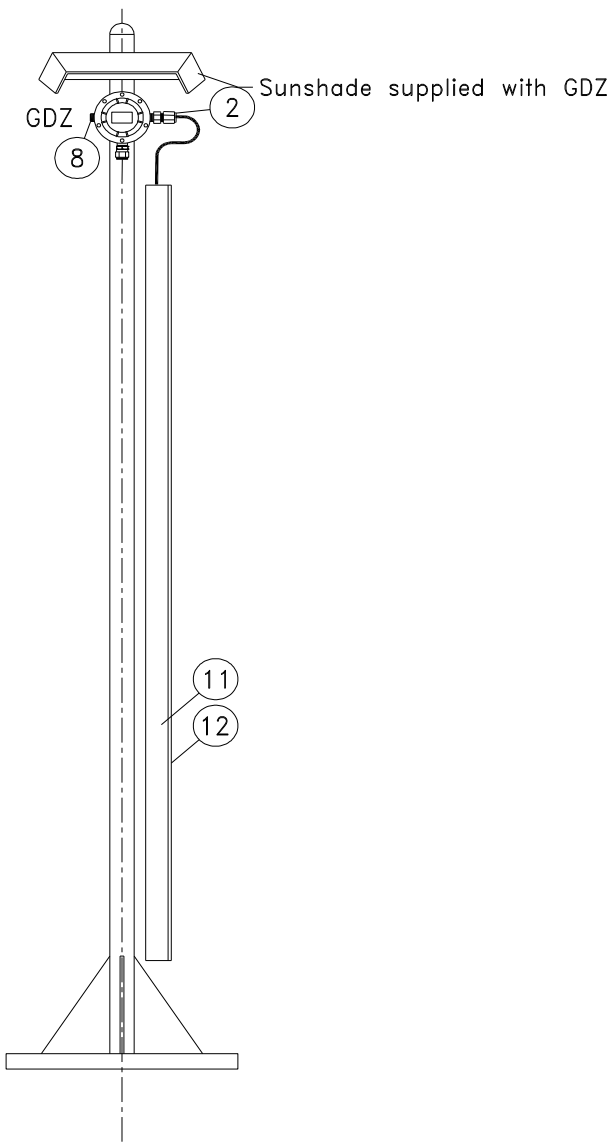
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 029	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02111
10	950-GDZ-03104
11	950-GDZ-03105
12	950-GDZ-03106
13	950-GDZ-03107
14	~~950-GDZ-03108~~ 950-GDZ-03102
15	950-GDZ-03109
16	950-GDZ-02117
17	950-GDZ-02119
18	950-GDZ-02120
19	950-GDZ-01101
20	950-GDZ-01102
21	950-GDZ-01103
22	950-GDZ-03101
23	950-GDZ-03103

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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

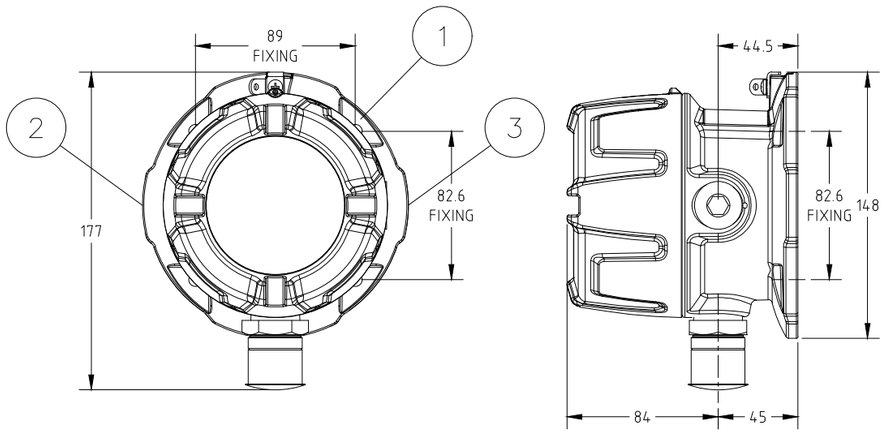
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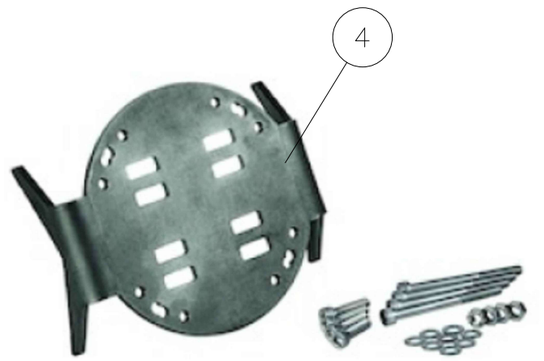
HYDROGEN POINT DETECTOR / PIPE MOUNTING

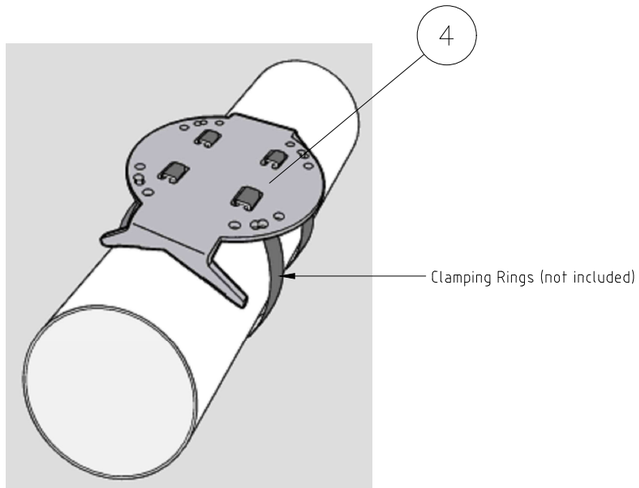
ITEM	DESCRIPTIONS	NR
1	Hydrogen point detector, DRÄGER Polytron 8200 CAT DQ d S 4-20/HART	1
2	Reducer 3/4" NPT - M20 Ex d AISI 316	2
3	3/4" plug Ex d AISI 316	1
4	Pipe mount bracket kit Polytron 5000/8000 series, DRÄGER	1
5	Sun and weather protection kit Polytron, DRÄGER	1
6	Stainless Steel Name Plate	1
7		
8		
9		
10		

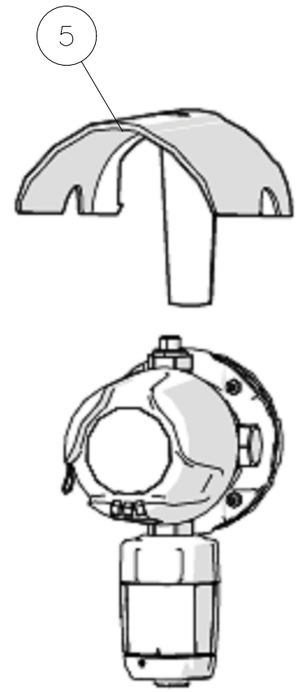
INSTALLATION QUANTITY

25

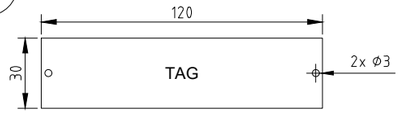






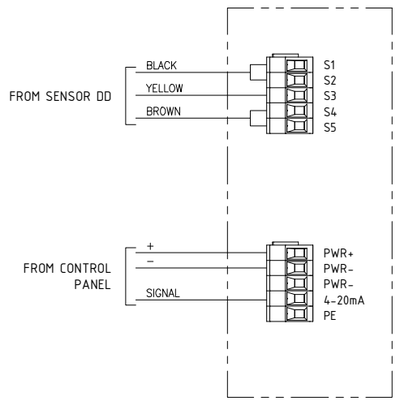


6 STAINLESS STEEL NAME PLATE DETAILS



NOTE 5

WIRING



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN POINT DETECTOR / PIPE MOUNTING

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 005

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN POINT DETECTOR / PIPE MOUNTING – TAG

POS.	TAG NUMBER
1	950-GDZ-02101
2	950-GDZ-02102
3	950-GDZ-02103
4	950-GDZ-02104
5	950-GDZ-02105
6	950-GDZ-02106
7	950-GDZ-02107
8	950-GDZ-02108
9	950-GDZ-02109
10	950-GDZ-02110
11	950-GDZ-02111
12	950-GDZ-02112
13	950-GDZ-02113
14	950-GDZ-02114
15	950-GDZ-02115
16	950-GDZ-02116
17	950-GDZ-05101
18	950-GDZ-05102
19	950-GDZ-05103
20	950-GDZ-05104
21	950-GDZ-05105
22	950-GDZ-05106
23	950-GDZ-03104
24	950-GDZ-03105
25	950-GDZ-03106

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
HYDROGEN POINT DETECTOR / PIPE MOUNTING – TAG

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 006 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

HYDROGEN POINT DETECTORS

POS.	TAG NUMBER	SERVICE
1	950-GDZ-02101	H2 GD FZ-02 H2 STORAGE VESSELS AREA
2	950-GDZ-02102	H2 GD FZ-02 H2 STORAGE VESSELS AREA
3	950-GDZ-02103	H2 GD FZ-02 H2 STORAGE VESSELS AREA
4	950-GDZ-02104	H2 GD FZ-02 H2 STORAGE VESSELS AREA
5	950-GDZ-02105	H2 GD FZ-02 H2 STORAGE VESSELS AREA
6	950-GDZ-02106	H2 GD FZ-02 H2 STORAGE VESSELS AREA
7	950-GDZ-02107	H2 GD FZ-02 H2 STORAGE VESSELS AREA
8	950-GDZ-02108	H2 GD FZ-02 H2 STORAGE VESSELS AREA
9	950-GDZ-02109	H2 GD FZ-02 H2 STORAGE VESSELS AREA
10	950-GDZ-02110	H2 GD FZ-02 H2 STORAGE VESSELS AREA
11	950-GDZ-02111	H2 GD FZ-02 H2 STORAGE VESSELS AREA
12	950-GDZ-02112	H2 GD FZ-02 H2 STORAGE VESSELS AREA
13	950-GDZ-02113	H2 GD FZ-02 H2 STORAGE VESSELS AREA
14	950-GDZ-02114	H2 GD FZ-02 H2 STORAGE VESSELS AREA
15	950-GDZ-02115	H2 GD FZ-02 H2 STORAGE VESSELS AREA
16	950-GDZ-02116	H2 GD FZ-02 H2 STORAGE VESSELS AREA
17	950-GDZ-04201	H2 GD FZ-04 B-400 HVAC AIR INTAKE
18	950-GDZ-04202	H2 GD FZ-04 B-400 HVAC AIR INTAKE
19	950-GDZ-04203	H2 GD FZ-04 B-400 HVAC AIR INTAKE
20	950-GDZ-04204	H2 GD FZ-04 B-400 AMBIENT
21	950-GDZ-04205	H2 GD FZ-04 B-400 AMBIENT
22	950-GDZ-04206	H2 GD FZ-04 B-400 AMBIENT
23	950-GDZ-04207	H2 GD FZ-04 B-300 HVAC AIR INTAKE
24	950-GDZ-04208	H2 GD FZ-04 B-300 HVAC AIR INTAKE
25	950-GDZ-04209	H2 GD FZ-04 B-300 HVAC AIR INTAKE
26	950-GDZ-04210	H2 GD FZ-04 B-300 AMBIENT
27	950-GDZ-04211	H2 GD FZ-04 B-300 AMBIENT
28	950-GDZ-04212	H2 GD FZ-04 B-300 AMBIENT
29	950-GDZ-04213	H2 GD FZ-04 B-200 HVAC AIR INTAKE
30	950-GDZ-04214	H2 GD FZ-04 B-200 HVAC AIR INTAKE
31	950-GDZ-04215	H2 GD FZ-04 B-200 HVAC AIR INTAKE
32	950-GDZ-04216	H2 GD FZ-04 B-200 AMBIENT
33	950-GDZ-04217	H2 GD FZ-04 B-200 AMBIENT
34	950-GDZ-04218	H2 GD FZ-04 B-200 AMBIENT
35	950-GDZ-05101	H2 GD FZ-05 BESS AREA
36	950-GDZ-05102	H2 GD FZ-05 BESS AREA
37	950-GDZ-05103	H2 GD FZ-05 BESS AREA
38	950-GDZ-05104	
39	950-GDZ-05105	
40	950-GDZ-05106	
41	950-GDZ-06201	H2 GD FZ-06 B-100 HVAC AIR INTAKE
42	950-GDZ-06202	H2 GD FZ-06 B-100 HVAC AIR INTAKE
43	950-GDZ-06203	H2 GD FZ-06 B-100 HVAC AIR INTAKE
44	950-GDZ-06204	H2 GD FZ-06 B-100 AMBIENT
45	950-GDZ-06205	H2 GD FZ-06 B-100 AMBIENT
46	950-GDZ-06206	H2 GD FZ-06 B-100 AMBIENT
47	950-GDZ-03104	H2 GD FZ-03 ELECTROLYZER PK AREA
48	950-GDZ-03105	H2 GD FZ-03 ELECTROLYZER PK AREA
49	950-GDZ-01103	H2 GD FZ-03 ELECTROLYZER PK AREA

File: 1724000821-IN-DS-00004-02.xlsx
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Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

The Dräger Polytron® 8200 CAT is an advanced explosion-proof transmitter for the detection of combustible gases in the lower explosion limit (LEL). It uses a catalytic bead DrägerSensor® Ex that will detect most flammable gases and vapors. In addition to a 3-wire 4 to 20-mA analog output with relays it also offers HART®, Modbus and Fieldbus protocols, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

The built-in DrägerSensor® Ex is based on the proven catalytic bead measuring principle. It has excellent long-term stability with outstanding poison resistance. And this is the reason for its durability. Due to the novel gas inlet opening, the sensor responds to gas in only a few seconds. This allows you to react immediately with countermeasures and prevent the development of a flammable atmosphere.

Easy device management via digital communication

The Dräger Polytron 8200 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8200 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information.

The Polytron 8200 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8200 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8200 features a Class I, Div. 1 rated explosion proof enclosure made from aluminium or stainless steel, making it suitable for a wide range of environmental conditions.

Make the impossible possible with the remote sensor

A remote explosion proof junction allows installation of the sensor up to 350' away from the transmitter in difficult to access areas. A permanently attached remote calibration adapter allows for remote bump testing or calibration from the Polytron display by using permanently attached tubing that takes the calibration gas to the sensor.

Technical Data

Dräger Polytron® 8200 CAT			
Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Flammable gases and vapors		
Measuring ranges	DQ	0 to 100 % LEL	
	LC	0 to 10 % LEL	
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	Accuracy/repeatability	Zero	≤ 1 % LEL
		Span	≤ 1 % LEL
		Long-term drift	≤ 3 % LEL after 6 months
	Response time	T50	< 7 seconds (methane)
		T90	< 13 seconds (methane)
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	DQ w/o relay, non-remote	105 mA at 24 V
		DQ w/ relay, remote	145 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 80 °C (-40 to 176 °F) without relay -40 to 70 °C (-40 to 158 °F) with relay- -50 to 85 °C (-122 to 185 °F) remote sensor	
	Pressure	23.6 to 38.4 inch Hg / 800 to 1,200 mbar	
	Humidity	5 to 95% r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Stainless steel 303	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D)	11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm	
	Weight, approx.	Aluminium	4.9 lbs / 2.2 kg
		SS316 L	8.8 lbs / 4.0 kg
Approvals*	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;	
	CE markings	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Shipping approvals (for DQ sensor only)	DNV GL, ABS, LR, CCS, RMRS	
	MED approval (for DQ sensor only)	Certificate No. MEDB0000411	

Technical Data

	DEKRA Performance approval (for DQ sensor only)	Certificate No. BVS 13 ATEX G 001 X
	SIL 2 certified by TUEV Sued	Certificate No. Z10 053474 0023

* All docking station versions are only ATEX/IECEx approved

Ordering Information

Dräger Polytron® 8200 CAT	Approval Code	Order Number
Dräger Polytron® 8200 CAT DQ d A 4-20/HART®	XTR 0410	83 44 439
Dräger Polytron® 8200 CAT DQ d A 4-20/HART® relay	XTR 0411	83 44 440
Dräger Polytron® 8200 CAT DQ d S 4-20/HART®	XTR 0510	83 44 448
Dräger Polytron® 8200 CAT DQ d S 4-20/HART® relay	XTR 0511	83 44 449
Dräger Polytron® 8xx0 Kit (Custom configuration e. g. LC sensor or bus communication)		83 44 800

Accessories		Order Number
Magnetic wand		45 44 101
Pipe mount bracket		45 44 198
Aluminum junction box for remote sensor ‘d’		45 44 099
Stainless steel junction box for remote sensor ‘d’		45 44 098
Duct mount kit		68 12 725
IR Connection Kit Polytron® 5000/8000		45 44 197
PolySoft licence (1 year)		83 28 600
PolySoft licence (subscription)		83 28 601
Splash guard		68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx		37 02 198
Gassing adapter	PE, w/o tubing	68 06 978
	PE incl. tubing	46 09 314
Calibration adapter Viton®		68 10 536
Process adapter (Stainless steel) for DQ		68 12 470
Process adapter (Stainless steel) for LC		68 12 465

HART® is a registered trademark of the HART Communication Foundation.
FOUNDATION fieldbus™ is a registered trademark of the Fieldbus Foundation™.
PROFIBUS® is a registered trademark of PROFIBUS and PROFINET International (PI).
PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.
Viton® is a registered trademark of the DuPont company.
Windows® is a registered trademark of Microsoft Corporation.

ITEM	Tag	950-MFA-03101	: FZ-03 MFA Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001545		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX00 Miscellaneous

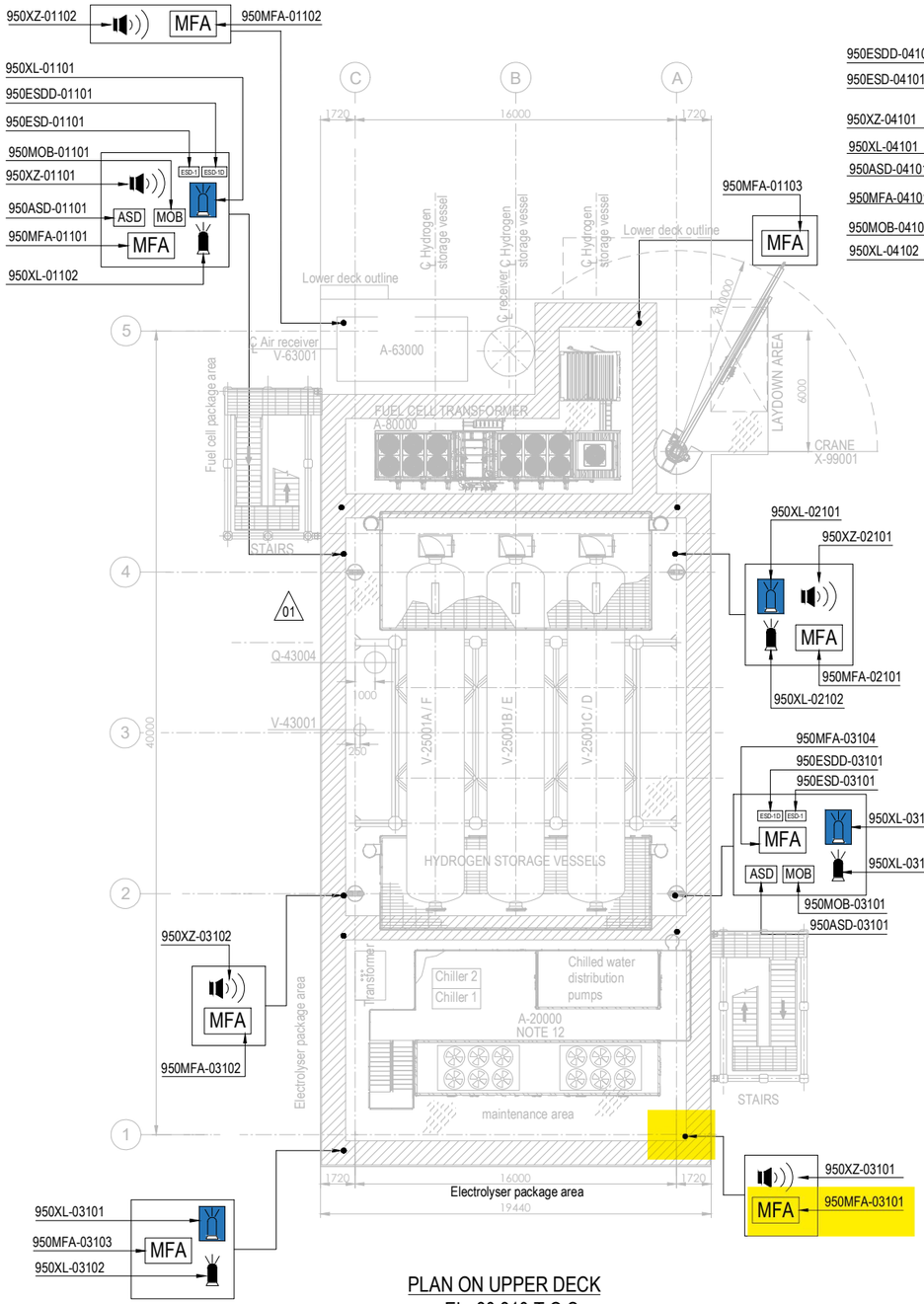
1	Check for mechanical damage.	PL
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	NA
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	OK
8	Check supporting and protection against vibrations.	PL
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-11-29	2024-12-05	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-29T10:58:33.697Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-05T15:42:44.753Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



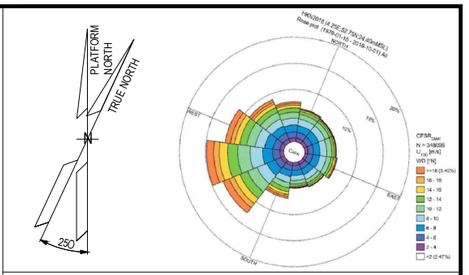
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION
1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

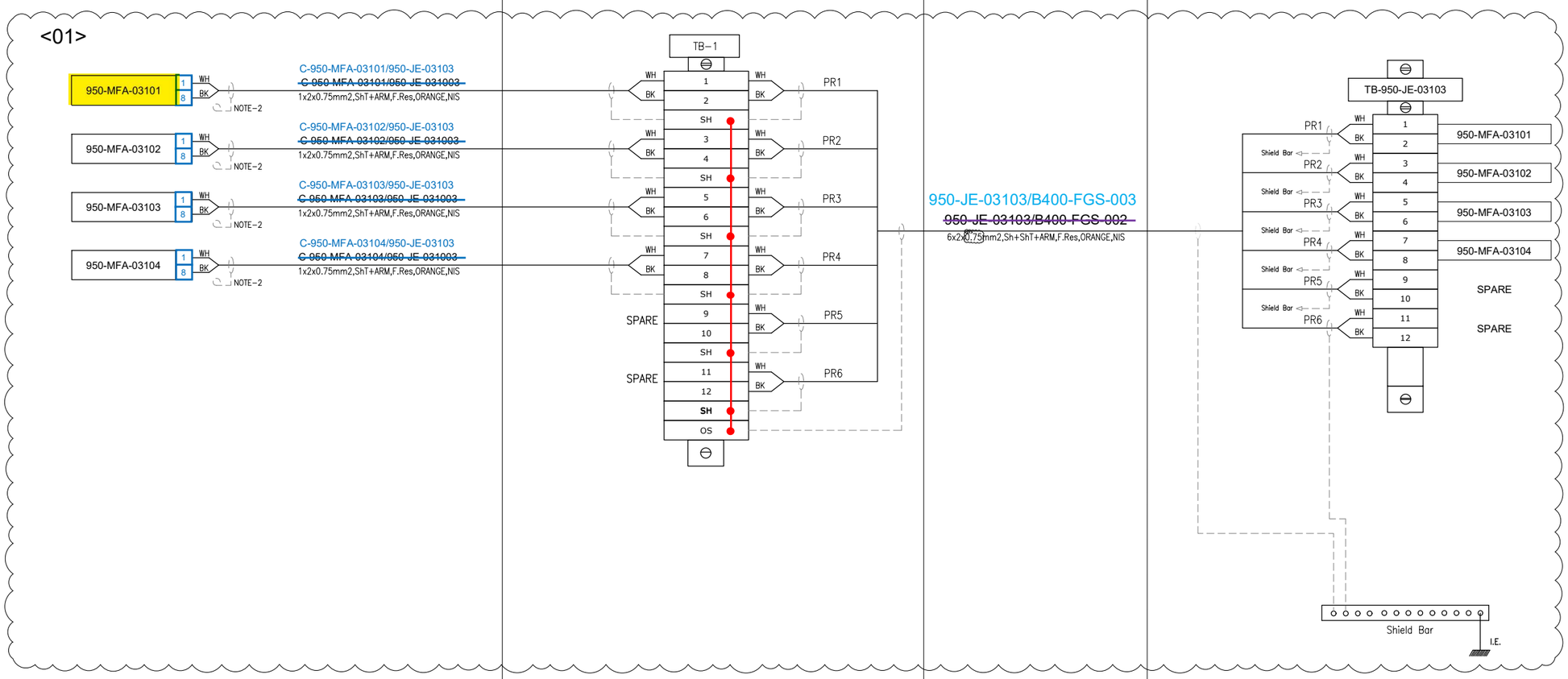
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DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03103	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03103

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

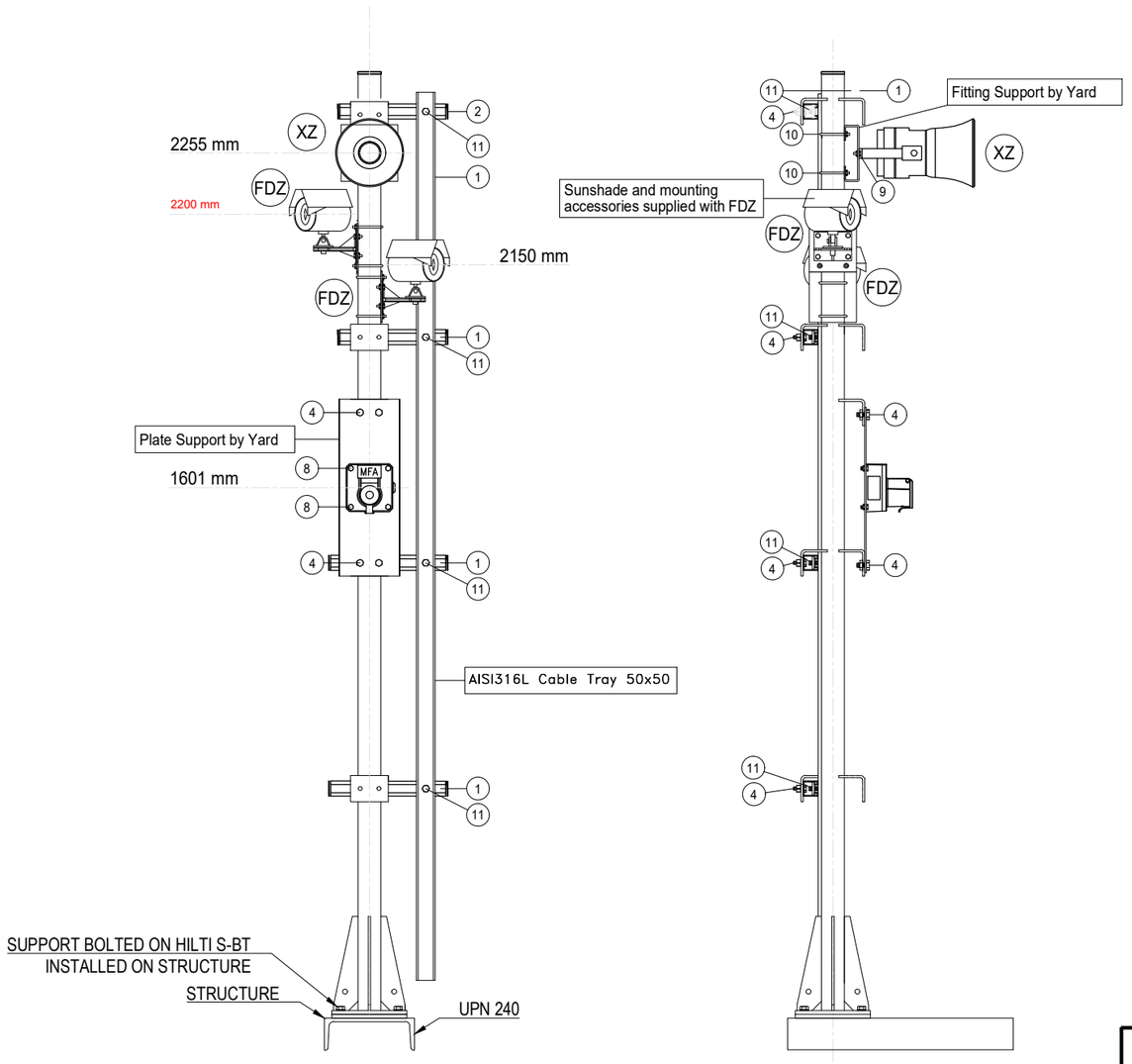
	DRAWING NO.	SHEET	REV.
A3	123A90–DDL–IN–DG–40016	038	01

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

FGS-05

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	12
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
~~9~~	~~AISI 316L BOLT M6x35 + NUT M6 + WASHER M6~~	2
10	AISI 316L 2" U BOLT M8+ N.2 NUT M8 + N.2 WASHER M8	2
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	FDZ	FLAME DETECTOR	950-FDZ-01102
	FDZ	FLAME DETECTOR	~~950-FDZ-02101~~
	XZ	SOUNDER	950-XZ-01102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-01102
2	FDZ	FLAME DETECTOR	950-FDZ-02102
	FDZ	FLAME DETECTOR	950-FDZ-03101
	XZ	SOUNDER	950-XZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03102
3	FDZ	FLAME DETECTOR	950-FDZ-03103
	FDZ	FLAME DETECTOR	~~950-FDZ-02104~~ 950-FDZ-02102
	XZ	SOUNDER	950-XZ-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03101

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_G	03/12/24	G.Randi

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ROSETTI MARINO

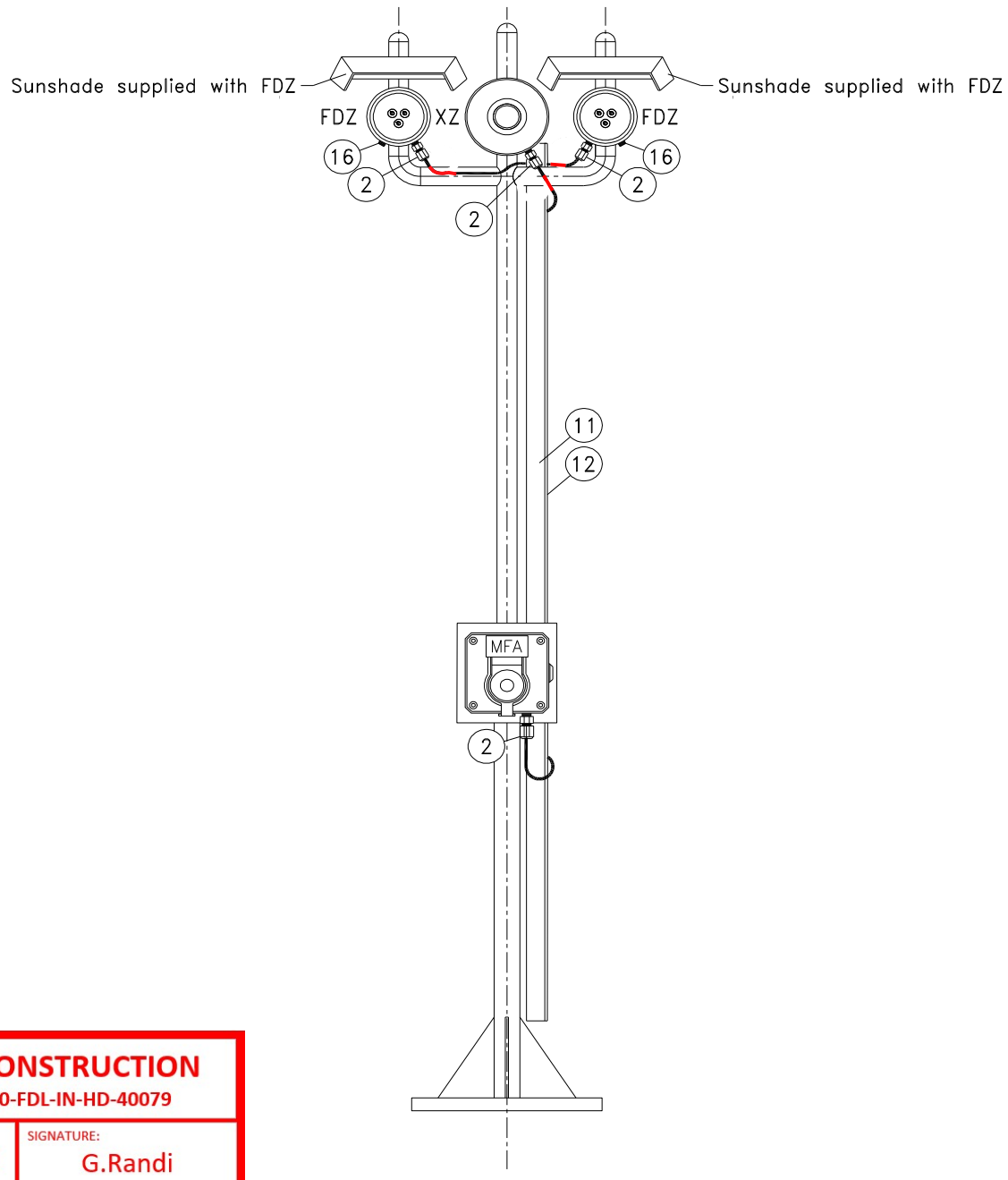
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 024	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-FDZ-01102
	950-XZ-01102
	~~950-FDZ-02101~~
	950-MFA-01102
2	950-FDZ-02102
	950-XZ-03102
	950-FDZ-03101
	950-MFA-03102
3	950-FDZ-03103
	950-XZ-03101
	950-FDZ-02104
	950-MFA-03101

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

REV.:	DATE:	SIGNATURE:
2_E	03/12/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	2
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

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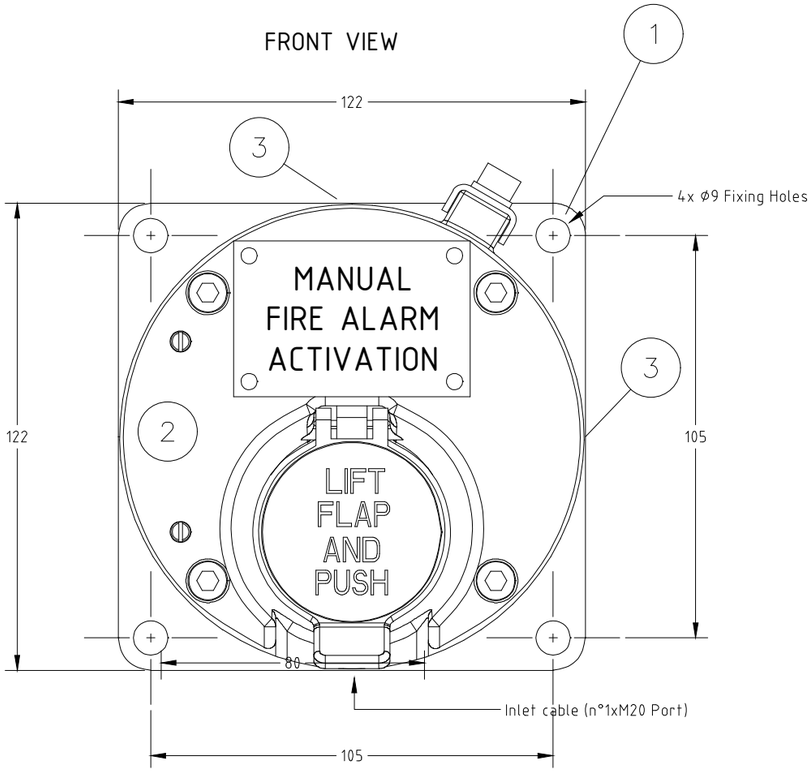
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED)

ITEM	DESCRIPTIONS	NR
1	Manual Call Point (Manual Fire Alarm) (Red), MEDC SM87PBLSD1B1ROYHDRZ	1
2	Stainless Steel Name Plate	1
3	Stop Plug M20 Ex d AISI 316	2
4		
5		
6		
7		
8		
9		
10		

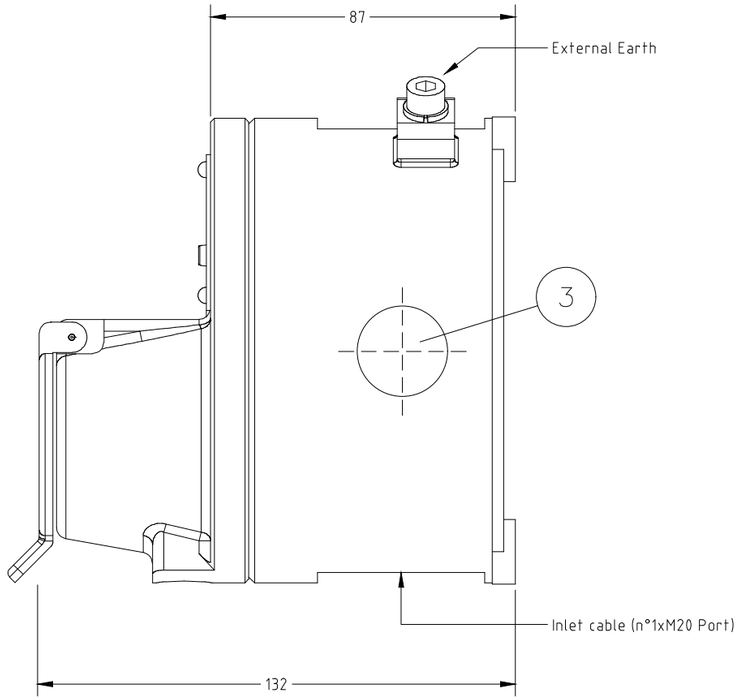
INSTALLATION QUANTITY

21

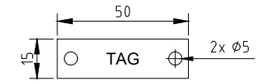
FRONT VIEW



SIDE VIEW



2 STAINLESS STEEL NAME PLATE DETAILS

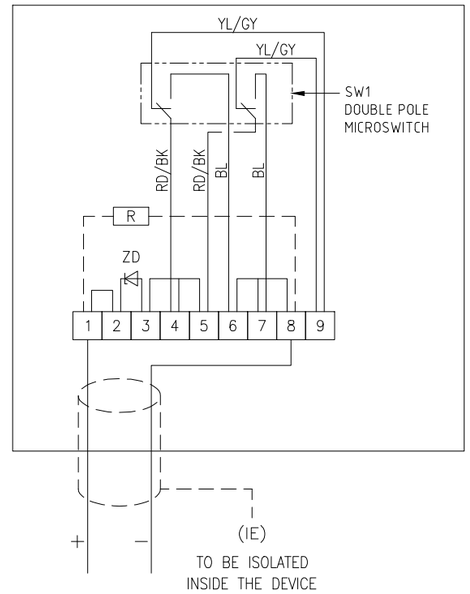


NOTE 5

WIRING

TERMINAL STRIP

ZD= ZENER 1N5339B 5.6V
R= 36 KOhm



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED)

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 015 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

MANUAL CALL POINT (MANUAL FIRE ALARM) (RED) – TAG

POS.	TAG NUMBER
1	950-MFA-01101
2	950-MFA-01102
3	950-MFA-01103
4	950-MFA-02101
5	950-MFA-03101
6	950-MFA-03102
7	950-MFA-03103
8	950-MFA-03104
9	950-MFA-04101
10	950-MFA-04102
11	950-MFA-04201
12	950-MFA-04202
13	950-MFA-04203
14	950-MFA-05101
15	950-MFA-05102
16	950-MFA-05103
17	950-MFA-05104
18	950-MFA-06101
19	950-MFA-06102
20	950-MFA-06201
21	950-MFA-07101

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED) – TAG

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 016 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

MANUAL FIRE ALARM

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-MFA-01101	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
2	950-MFA-01102	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
3	950-MFA-01103	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
4	950-MFA-02101	FZ-02 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
5	950-MFA-03101	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
6	950-MFA-03102	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
7	950-MFA-03103	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
8	950-MFA-03104	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
9	950-MFA-04101	FZ-04 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
10	950-MFA-04102	FZ-04 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
11	950-MFA-04201	FZ-04 MFA ACTIVATION - B-400 INDOOR	MANUAL FIRE ALARM ACTIVATION
12	950-MFA-04202	FZ-04 MFA ACTIVATION - B-300 INDOOR	MANUAL FIRE ALARM ACTIVATION
13	950-MFA-04203	FZ-04 MFA ACTIVATION - B-200 INDOOR	MANUAL FIRE ALARM ACTIVATION
14	950-MFA-05101	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
15	950-MFA-05102	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
16	950-MFA-05103	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
17	950-MFA-05104	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
18	950-MFA-06101	FZ-06 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
19	950-MFA-06102	FZ-06 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
20	950-MFA-06201	FZ-06 MFA ACTIVATION - B-100 INDOOR	MANUAL FIRE ALARM ACTIVATION
21	950-MFA-07101	FZ-07 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION

File: 1724000821-IN-DS-00004-02.xlsx
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SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

The units are both easy to install and maintain. Intrinsically safe Ex ia and flameproof Ex d versions of each model are available.

A choice of either stainless steel or alloy makes the range suitable for either the offshore or onshore industries. Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

ATEX IECEx cULus LISTED ULC INMETRO CSA DNV·GL MARITIME CCC

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All other trademarks are property of their respective owners.

Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

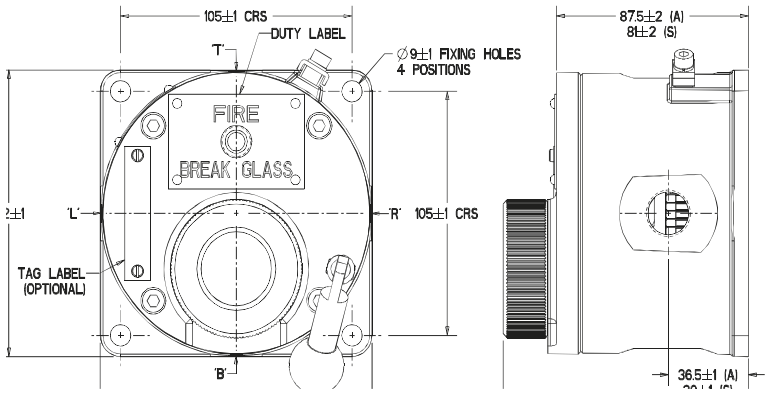
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

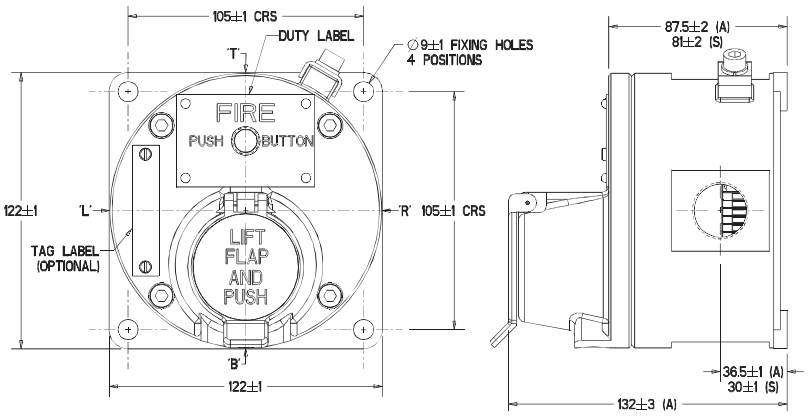
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy	
Finish	Paint finish as standard or to customer specification	
Voltage	Ex d 24V a.c./d.c. Ex ia 28V	
Rating	2A	
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)	
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA	
Certified temp	Ex d* Ex ia* UL CSA Explosion proof - Class 1, Div 1 & 2. CSA - Ex d IIC CSA Intrinsically safe - Class 1, Div 1 & 2 *Note: includes ATEX, IECEx & INMETRO versions	–55°C to +70°C. –55°C to +60°C –20°C to +55°C (LED version only) –40°C to +70°C, –20°C to +55°C (LED version only) –50°C to +55°C –55°C to +70°C –50°C to +40°C
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)	
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)	
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side	
Terminals	Will accept up to 1·5mm² cable	
Resistor values	470R minimum (d.c. & I.S. units only)	

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*

	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*

	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification

	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries

	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label

	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label

	Code
Required	Y*
Not required	N

*Please specify

Options

	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

*Please specify

Finish

	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

ITEM	Tag	950-MFA-03103	: FZ-03 MFA Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001547		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX00 Miscellaneous

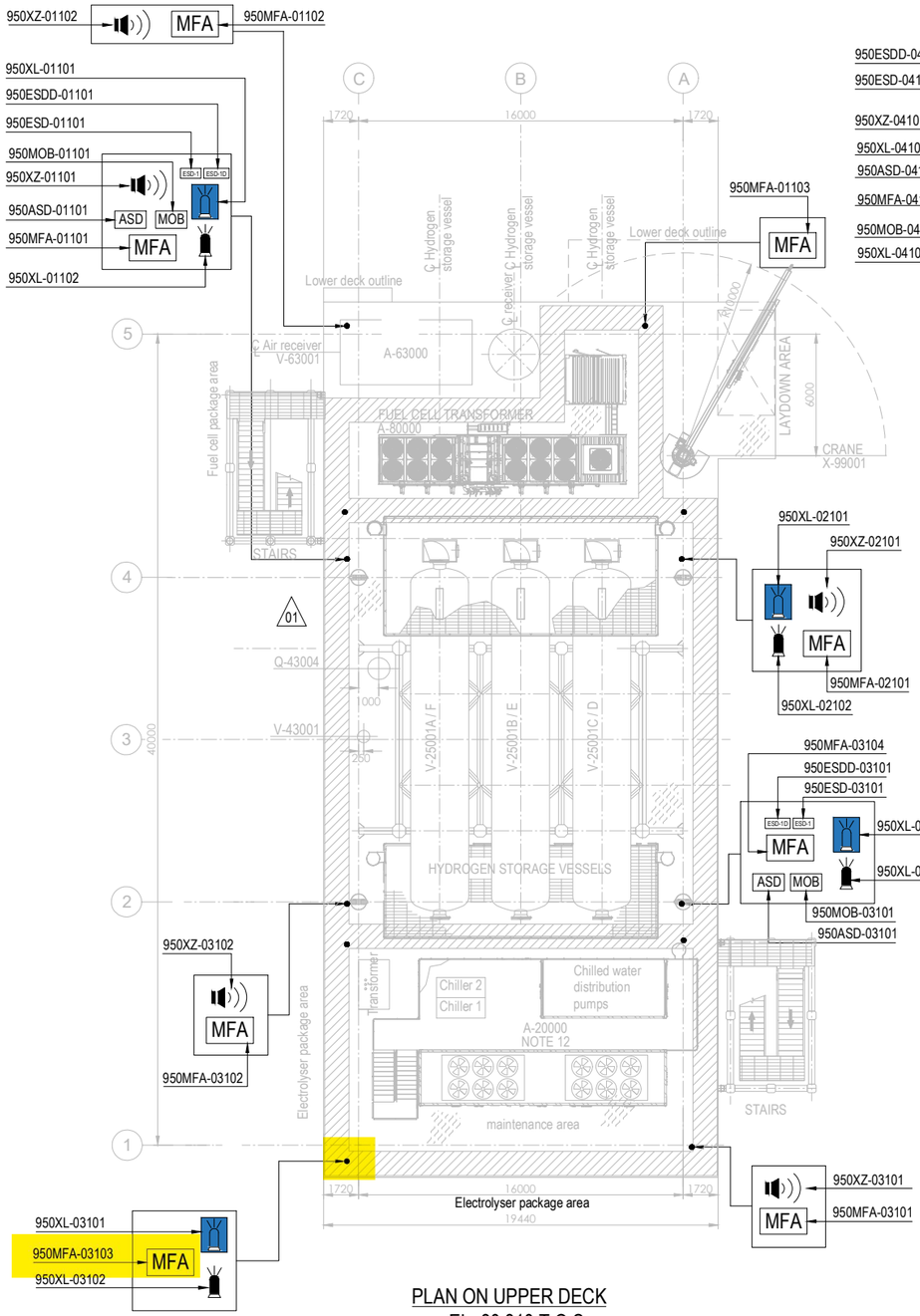
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	NA
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	OK
8	Check supporting and protection against vibrations.	PL
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-11-29	2024-12-05	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-29T10:59:16.983Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-05T15:43:39.300Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



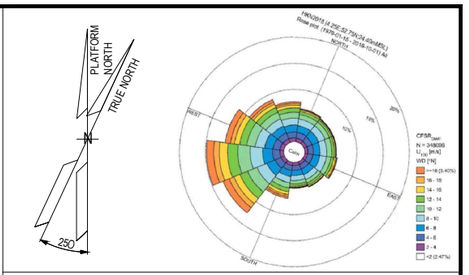
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION
1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03103	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

950-MFA-03101 (1, 8) WH, BK — NOTE-2

C-950-MFA-03101/950-JE-03103
~~C-950-MFA-03101/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03102 (1, 8) WH, BK — NOTE-2

C-950-MFA-03102/950-JE-03103
~~C-950-MFA-03102/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03103 (1, 8) WH, BK — NOTE-2

C-950-MFA-03103/950-JE-03103
~~C-950-MFA-03103/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

950-MFA-03104 (1, 8) WH, BK — NOTE-2

C-950-MFA-03104/950-JE-03103
~~C-950-MFA-03104/950-JE-03103~~
1x2x0.75mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

WH/BK	1	WH/BK — PR1
	2	
	SH	
WH/BK	3	WH/BK — PR2
	4	
	SH	
WH/BK	5	WH/BK — PR3
	6	
	SH	
WH/BK	7	WH/BK — PR4
	8	
	SH	
SPARE	9	WH/BK — PR5
	10	
	SH	
SPARE	11	WH/BK — PR6
	12	
	SH	
	OS	

950-JE-03103/B400-FGS-003
~~950-JE-03103/B400-FGS-002~~
6x2x0.75mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03103

PR1 — Shield Bar	WH/BK 1	950-MFA-03101
	2	
PR2 — Shield Bar	WH/BK 3	950-MFA-03102
	4	
PR3 — Shield Bar	WH/BK 5	950-MFA-03103
	6	
PR4 — Shield Bar	WH/BK 7	950-MFA-03104
	8	
PR5 — Shield Bar	WH/BK 9	SPARE
	10	
PR6 — Shield Bar	WH/BK 11	SPARE
	12	

Shield Bar — I.E.

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03103

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

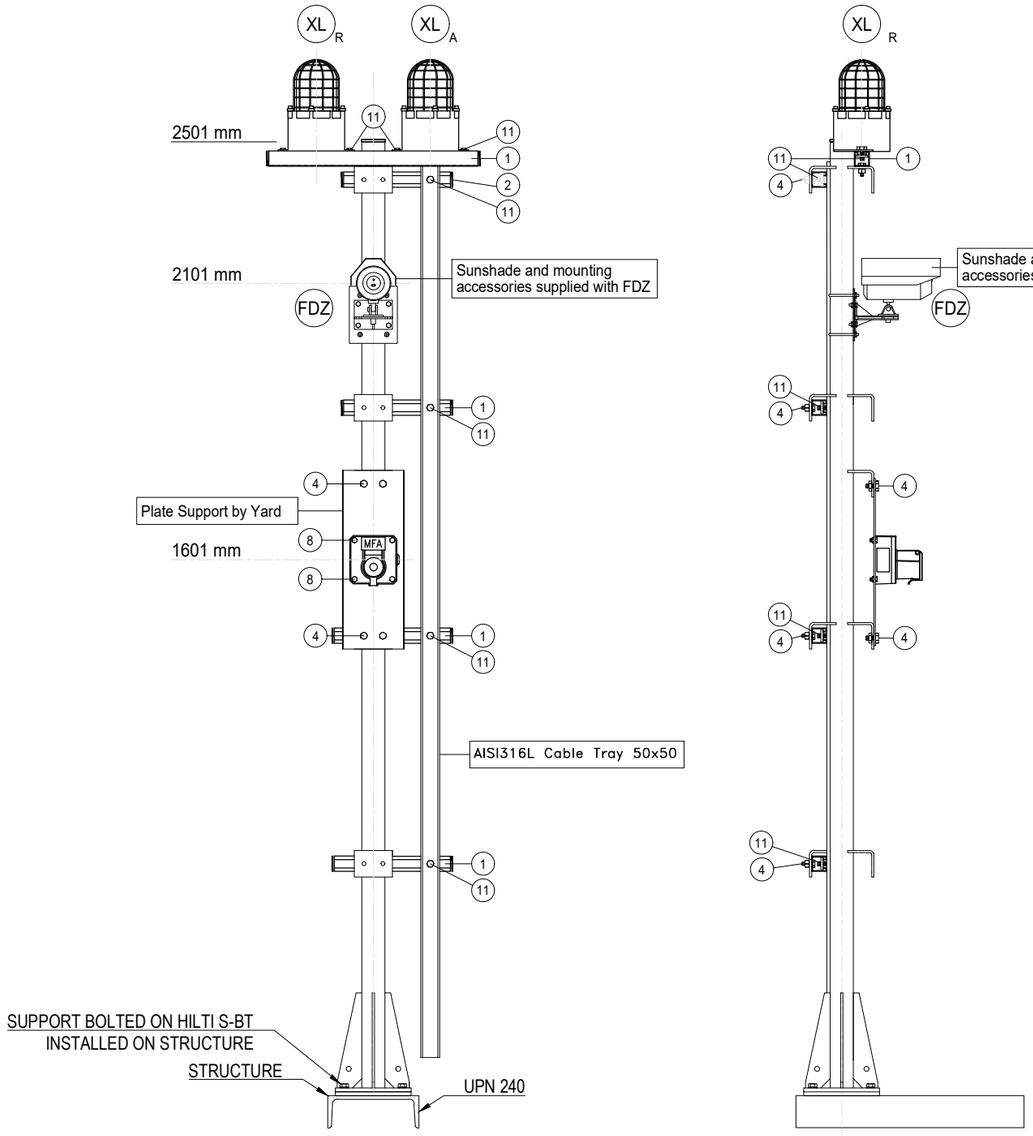
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A3	123A90–DDL–IN–DG–40016	038	01

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

FGS-07

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	14
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	8

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03101
	XL_R	BEACON - RED	950-XL-03102
	FDZ	FLAME DETECTOR	950-FDZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03103
2	XL_A	BEACON - AMBER	~~950-XL-06102~~ 950-XL-06104
	XL_R	BEACON - RED	950-XL-06103
	FDZ	FLAME DETECTOR	~~950-FDZ-06102~~
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-06102

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_G	03/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

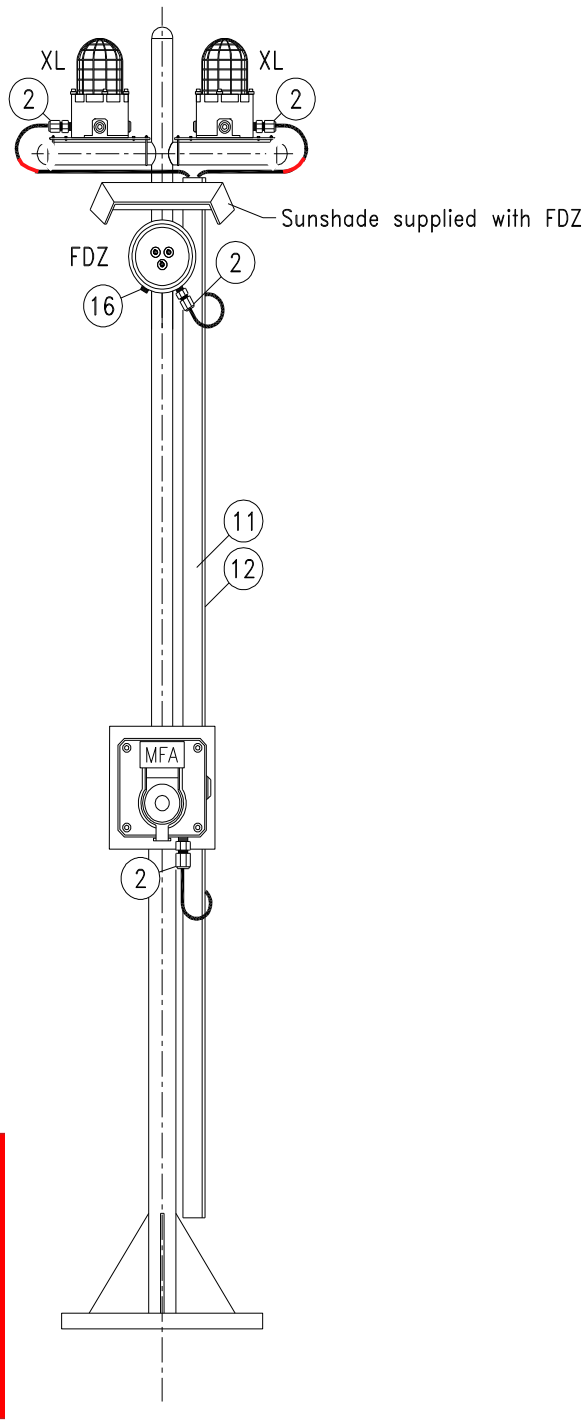
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 026	REV. 01

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 23 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-XL-03101 (AMBER)
	950-XL-03102 (RED)
	950-FDZ-03102
	950-MFA-03103
950-XL-06104 ~~950-XL-06102~~ (AMBER)	
2	950-XL-06103 (RED)
	950-FDZ-06102
	950-MFA-06102

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

REV.:	DATE:	SIGNATURE:
2_E	03/12/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

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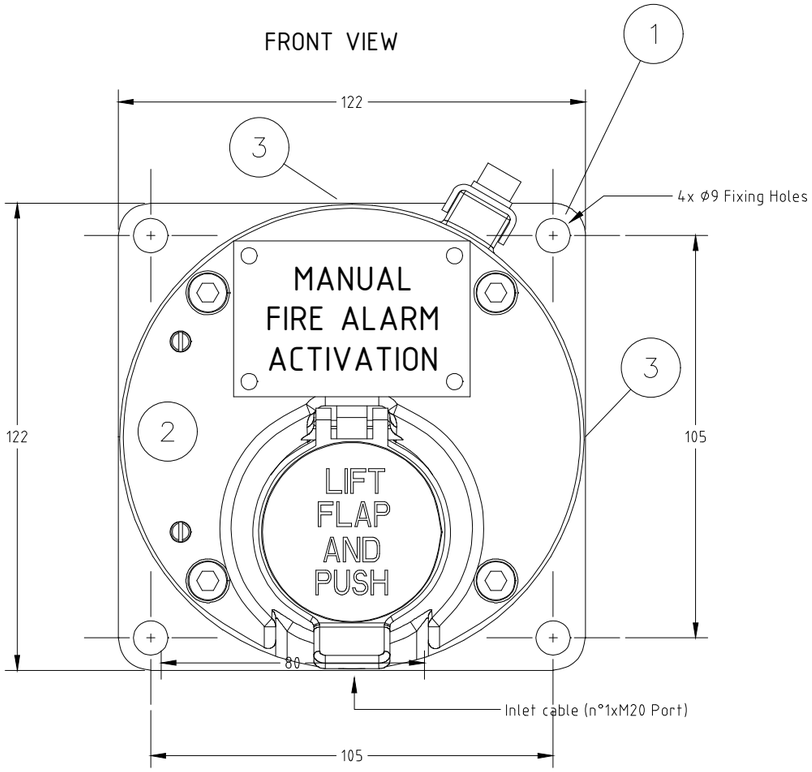
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED)

ITEM	DESCRIPTIONS	NR
1	Manual Call Point (Manual Fire Alarm) (Red), MEDC SM87PBLSD1B1ROYHDRZ	1
2	Stainless Steel Name Plate	1
3	Stop Plug M20 Ex d AISI 316	2
4		
5		
6		
7		
8		
9		
10		

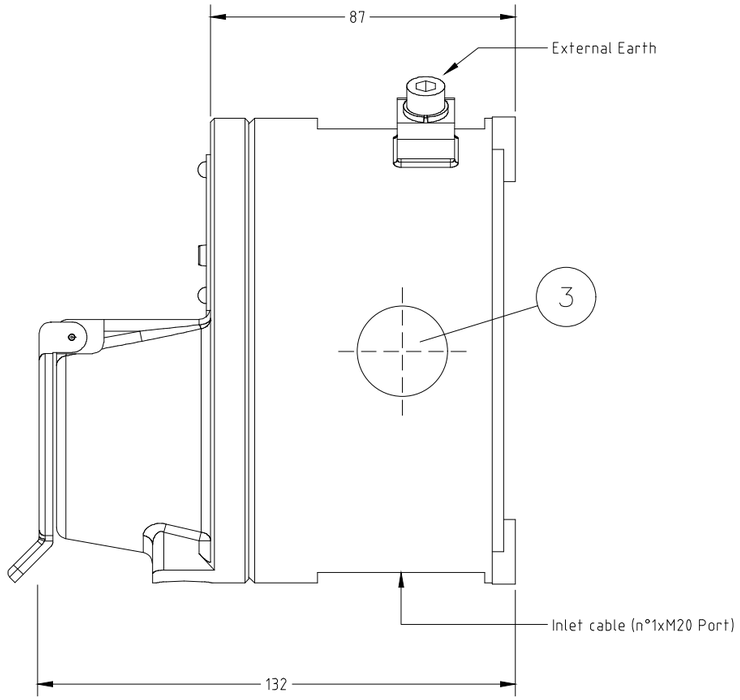
INSTALLATION QUANTITY

21

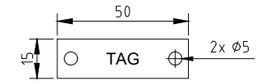
FRONT VIEW



SIDE VIEW



2 STAINLESS STEEL NAME PLATE DETAILS

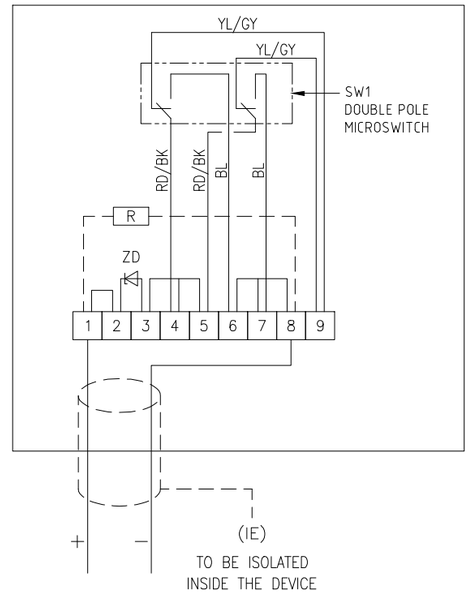


NOTE 5

WIRING

TERMINAL STRIP

ZD= ZENER 1N5339B 5.6V
R= 36 KOhm



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED)

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

A3 | DRAWING NO. 1724000821-IN-DA-00003 | SHEET 015 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

MANUAL CALL POINT (MANUAL FIRE ALARM) (RED) – TAG

POS.	TAG NUMBER
1	950-MFA-01101
2	950-MFA-01102
3	950-MFA-01103
4	950-MFA-02101
5	950-MFA-03101
6	950-MFA-03102
7	950-MFA-03103
8	950-MFA-03104
9	950-MFA-04101
10	950-MFA-04102
11	950-MFA-04201
12	950-MFA-04202
13	950-MFA-04203
14	950-MFA-05101
15	950-MFA-05102
16	950-MFA-05103
17	950-MFA-05104
18	950-MFA-06101
19	950-MFA-06102
20	950-MFA-06201
21	950-MFA-07101

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
MANUAL CALL POINT (MANUAL FIRE ALARM) (RED) – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 016

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

MANUAL FIRE ALARM

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-MFA-01101	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
2	950-MFA-01102	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
3	950-MFA-01103	FZ-01 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
4	950-MFA-02101	FZ-02 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
5	950-MFA-03101	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
6	950-MFA-03102	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
7	950-MFA-03103	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
8	950-MFA-03104	FZ-03 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
9	950-MFA-04101	FZ-04 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
10	950-MFA-04102	FZ-04 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
11	950-MFA-04201	FZ-04 MFA ACTIVATION - B-400 INDOOR	MANUAL FIRE ALARM ACTIVATION
12	950-MFA-04202	FZ-04 MFA ACTIVATION - B-300 INDOOR	MANUAL FIRE ALARM ACTIVATION
13	950-MFA-04203	FZ-04 MFA ACTIVATION - B-200 INDOOR	MANUAL FIRE ALARM ACTIVATION
14	950-MFA-05101	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
15	950-MFA-05102	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
16	950-MFA-05103	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
17	950-MFA-05104	FZ-05 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
18	950-MFA-06101	FZ-06 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
19	950-MFA-06102	FZ-06 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION
20	950-MFA-06201	FZ-06 MFA ACTIVATION - B-100 INDOOR	MANUAL FIRE ALARM ACTIVATION
21	950-MFA-07101	FZ-07 MFA ACTIVATION	MANUAL FIRE ALARM ACTIVATION

File: 1724000821-IN-DS-00004-02.xlsx
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SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

The units are both easy to install and maintain. Intrinsically safe Ex ia and flameproof Ex d versions of each model are available.

A choice of either stainless steel or alloy makes the range suitable for either the offshore or onshore industries. Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

ATEX IECEx cULus LISTED ULC INMETRO CSA DNV·GL MARITIME CCC

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NG17 5FB

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March 2024

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Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

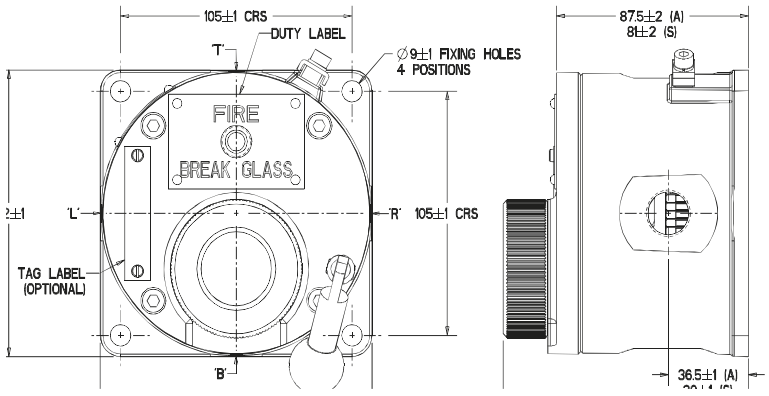
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

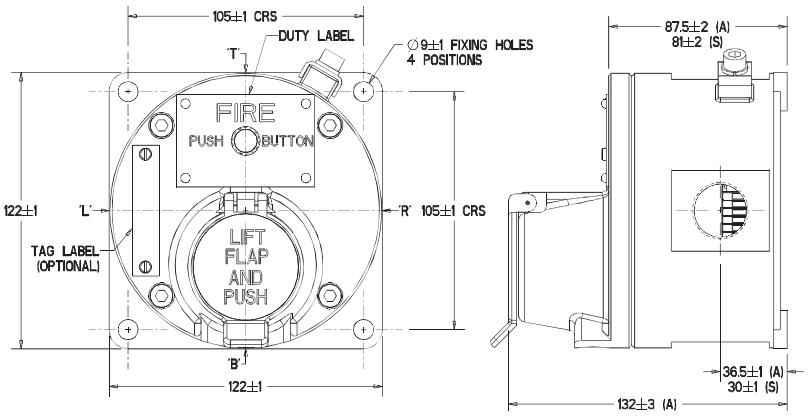
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy	
Finish	Paint finish as standard or to customer specification	
Voltage	Ex d 24V a.c./d.c. Ex ia 28V	
Rating	2A	
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)	
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA	
Certified temp	Ex d* Ex ia* UL CSA Explosion proof - Class 1, Div 1 & 2. CSA - Ex d IIC CSA Intrinsically safe - Class 1, Div 1 & 2 *Note: includes ATEX, IECEx & INMETRO versions	–55°C to +70°C. –55°C to +60°C –20°C to +55°C (LED version only) –40°C to +70°C, –20°C to +55°C (LED version only) –50°C to +55°C –55°C to +70°C –50°C to +40°C
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)	
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)	
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side	
Terminals	Will accept up to 1·5mm² cable	
Resistor values	470R minimum (d.c. & I.S. units only)	

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*

	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*

	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification

	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries

	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label

	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label

	Code
Required	Y*
Not required	N

*Please specify

Options

	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

*Please specify

Finish

	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

ITEM	Tag	950-XL-03101	: FZ-03 Gas Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001552	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX00	Miscellaneous

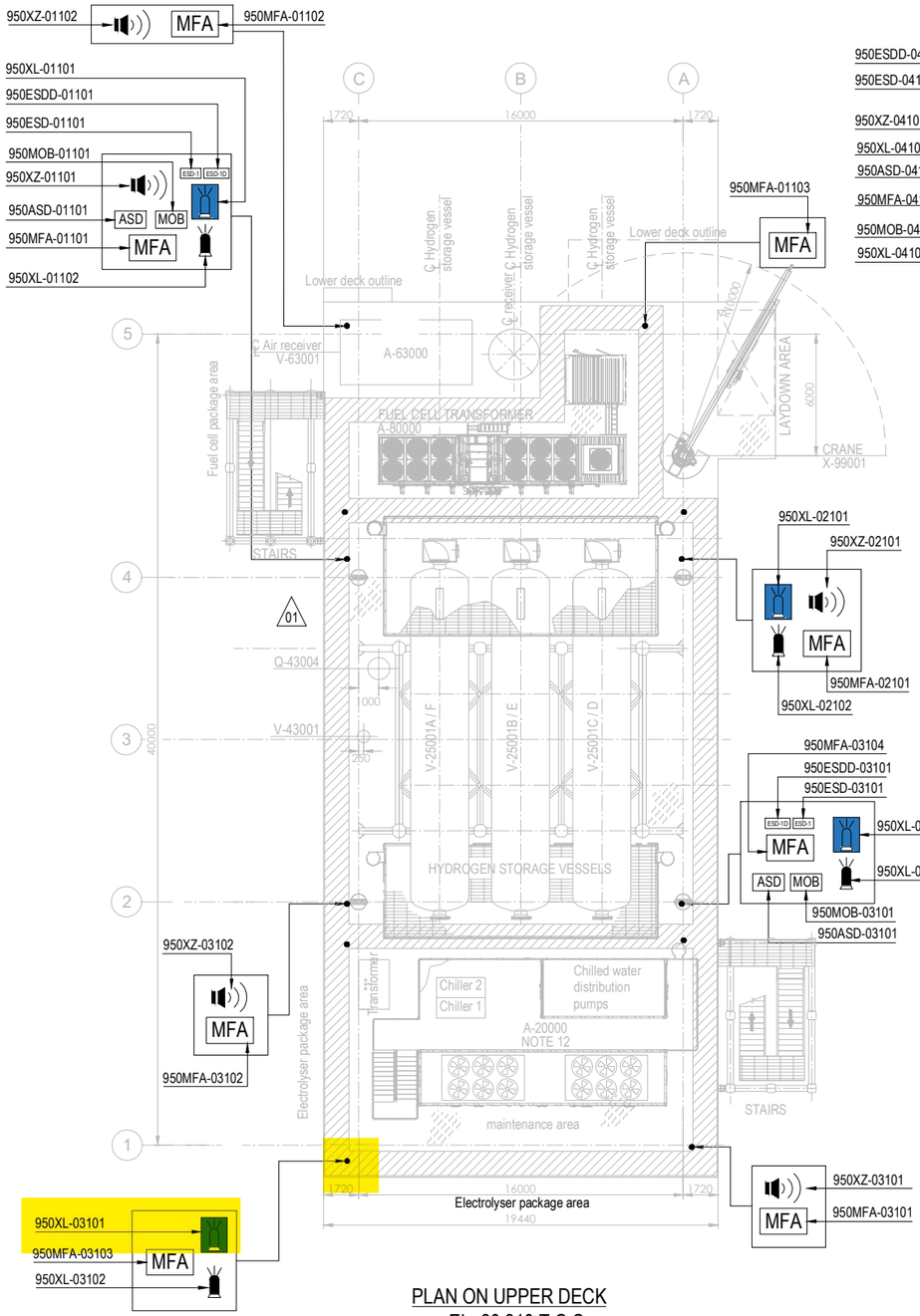
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	NA
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	PL
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

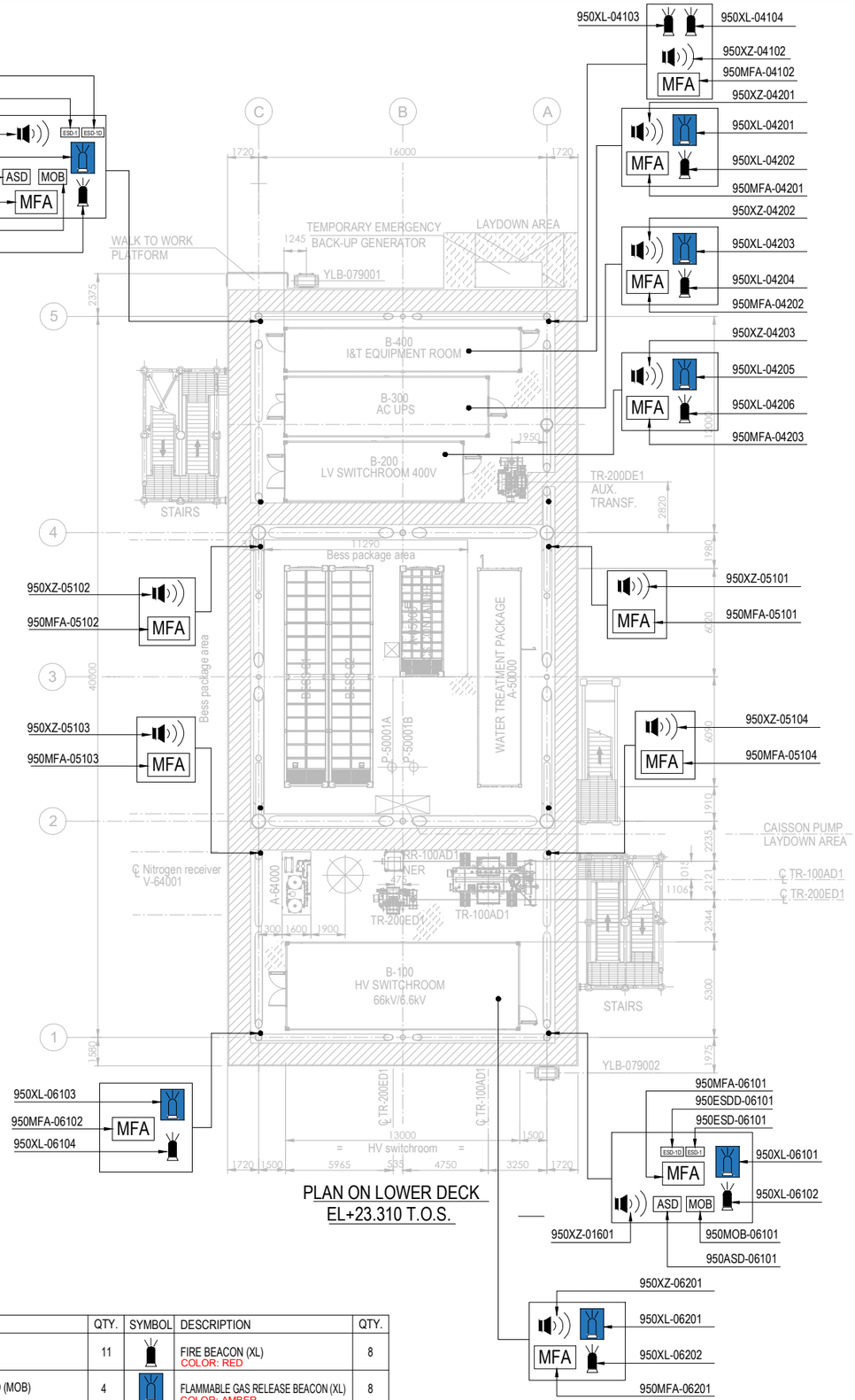
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-02	2024-12-13	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T16:27:31.842Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-13T11:27:32.937Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

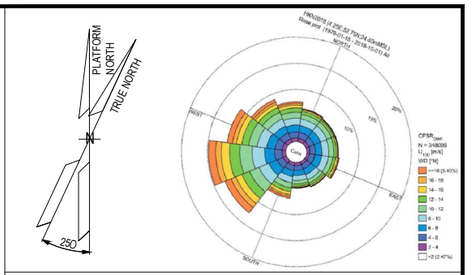


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION
1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

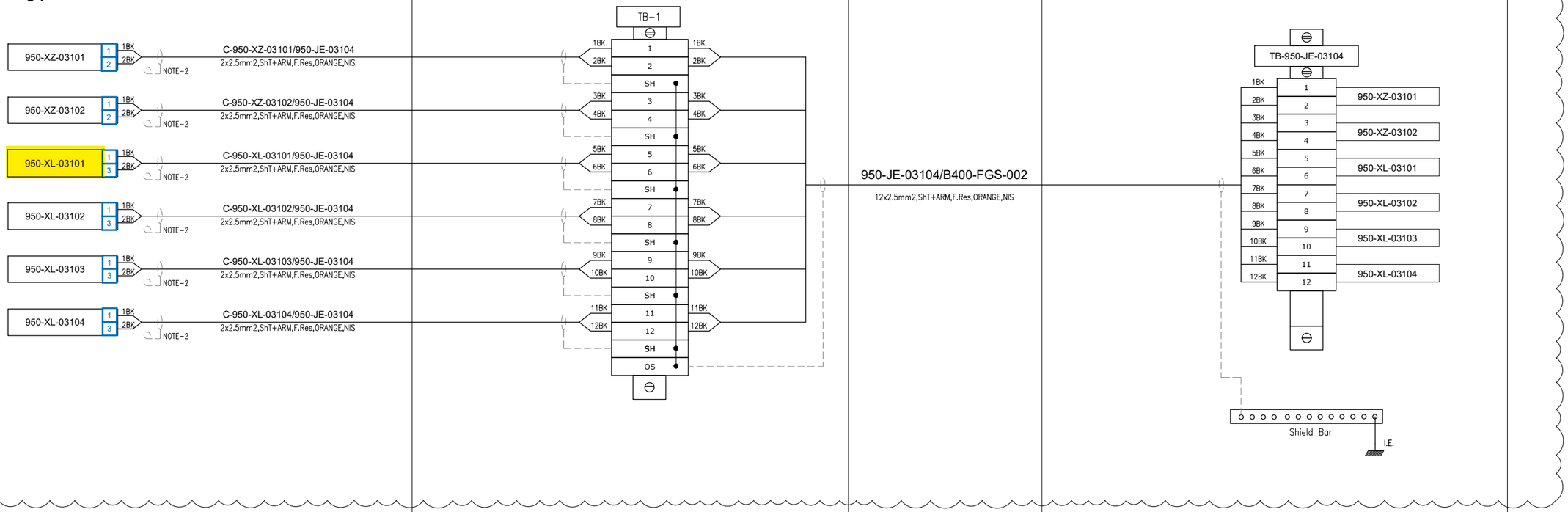
File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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

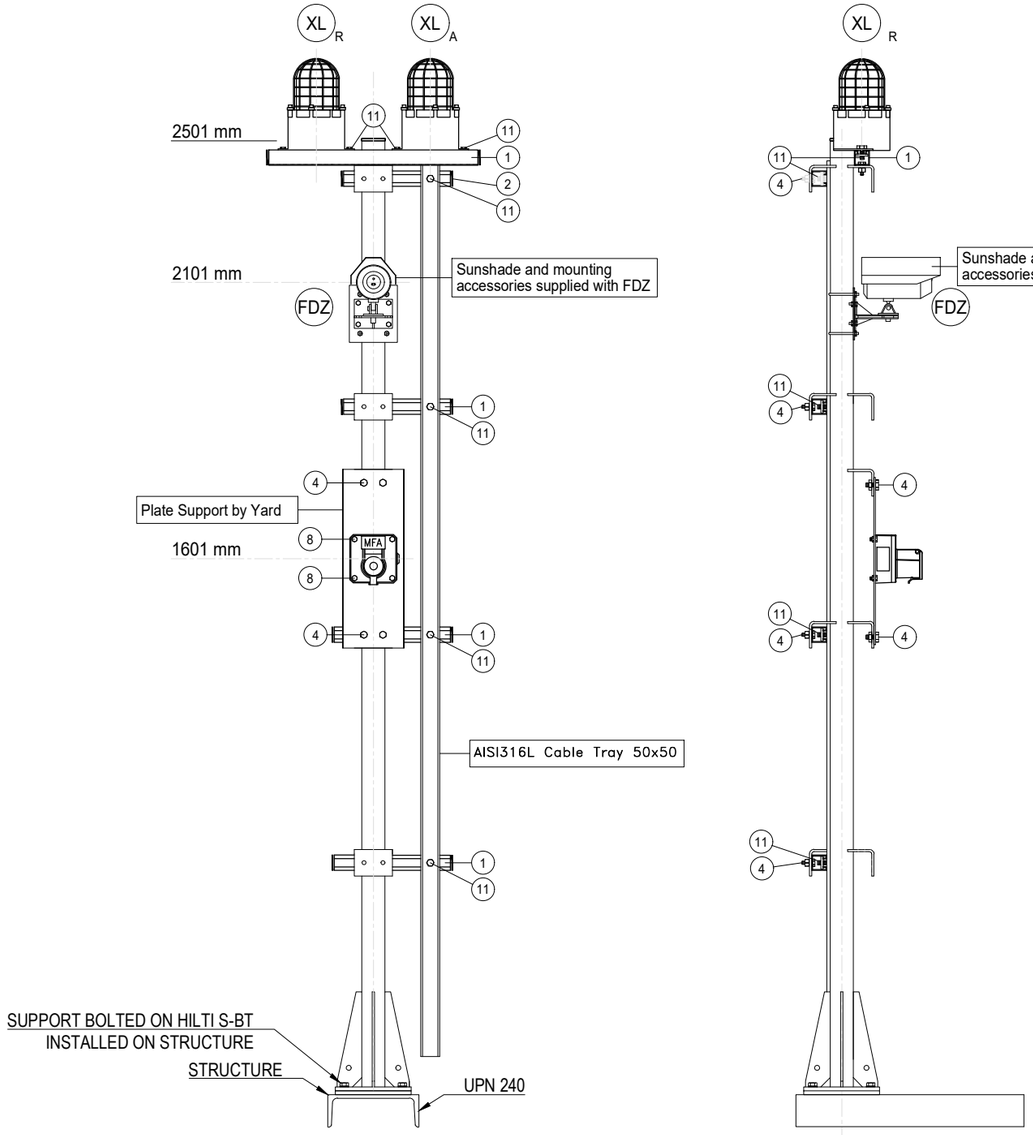
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File Name : 123A90-DDL-IN-DG-40016_Rev.01

FGS-07

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	14
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	8

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03101
	XL_R	BEACON - RED	950-XL-03102
	FDZ	FLAME DETECTOR	950-FDZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03103
2	XL_A	BEACON - AMBER	~~950-XL-06102~~ 950-XL-06104
	XL_R	BEACON - RED	950-XL-06103 1
	FDZ	FLAME DETECTOR	~~950-FDZ-06102~~
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-06102

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_G	03/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

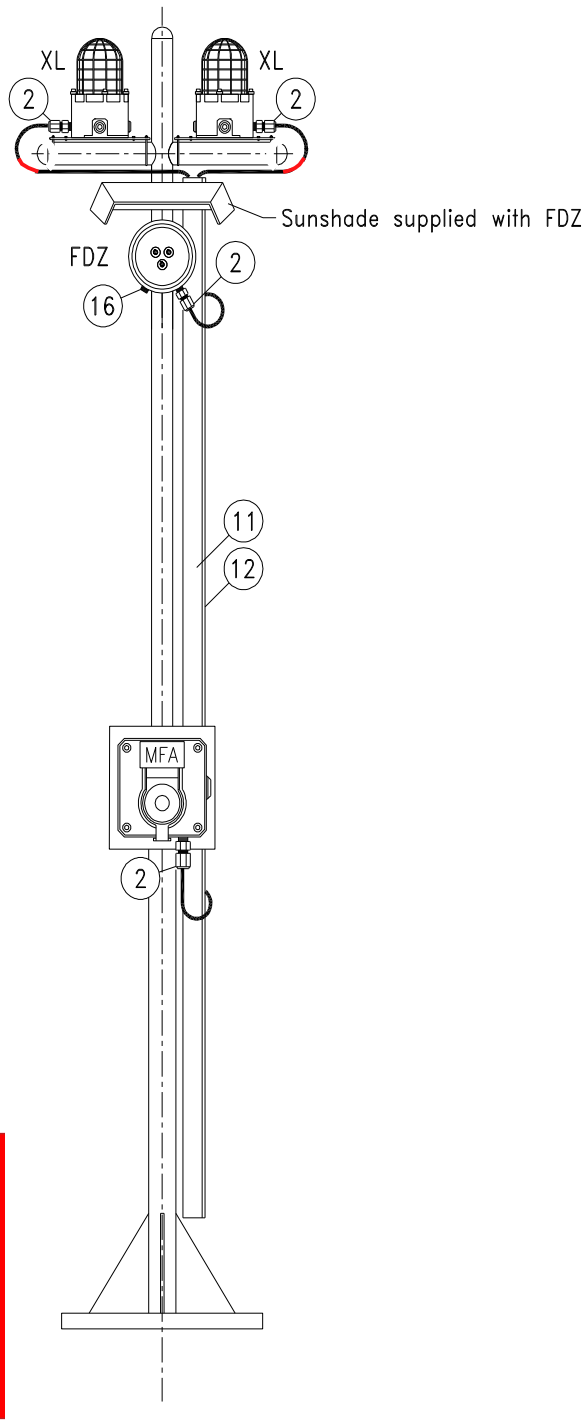
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 026	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-XL-03101 (AMBER)
	950-XL-03102 (RED)
	950-FDZ-03102
	950-MFA-03103
2	950-XL-06104 ~~950-XL-06102~~ (AMBER)
	950-XL-06103 (RED)
	950-FDZ-06102
	950-MFA-06102

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

REV.:	DATE:	SIGNATURE:
2_E	03/12/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

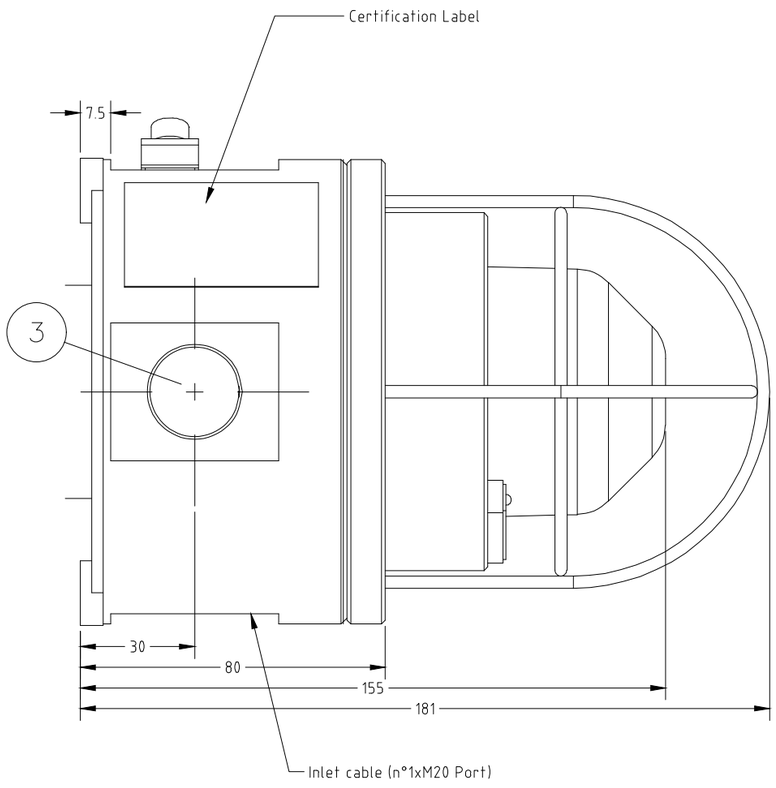
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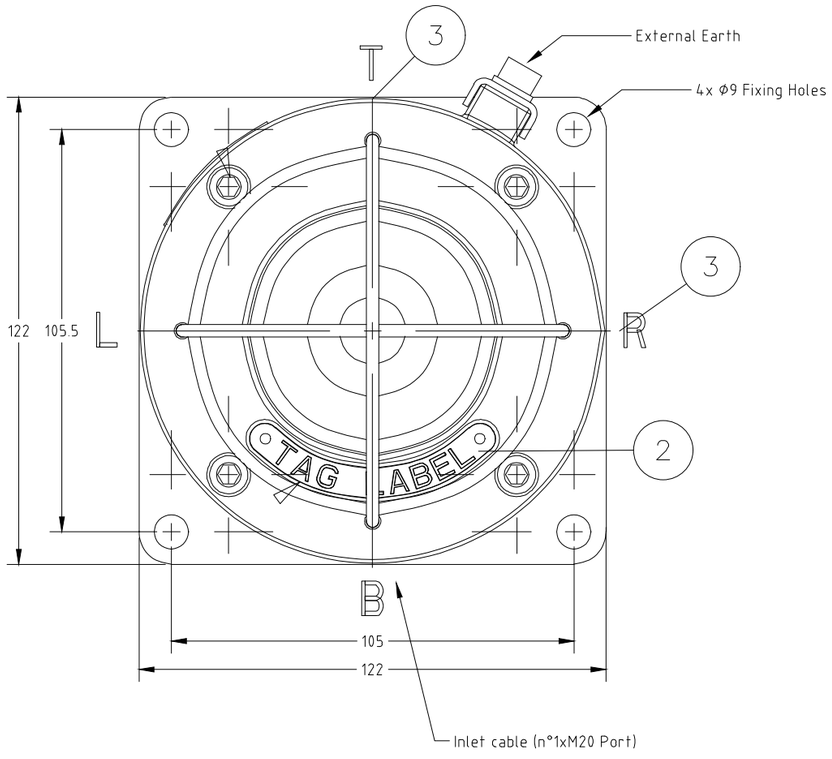
GAS FLASH BEACON (AMBER)

ITEM	DESCRIPTIONS	NR
1	Gas Flash Beacon (Amber), MEDC SM87LEDSB024AY1B1RYNRZZZ	1
2	Stainless Steel Name Plate	1
3	Stop Plug M20 Ex d AISI 316	2
4		
5		
6		
7		
8		
9		
10		

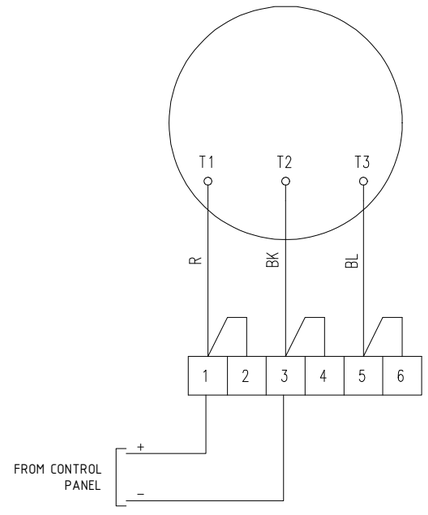
INSTALLATION
QUANTITY

13





WIRING



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
GAS FLASH BEACON (AMBER)

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 019

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

GAS FLASH BEACON (AMBER) – TAG

POS.	TAG NUMBER
1	950-XL-01101
2	950-XL-02101
3	950-XL-03101
4	950-XL-03103
5	950-XL-04101
6	950-XL-04103
7	950-XL-04201
8	950-XL-04203
9	950-XL-04205
10	950-XL-06101
11	950-XL-06103
12	950-XL-06201
13	950-XL-07101

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
GAS FLASH BEACON (AMBER) – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 020

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

GAS FLASH BEACON (AMBER)

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-XL-01101	FZ-01 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
2	950-XL-02101	FZ-02 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
3	950-XL-03101	FZ-03 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
4	950-XL-03103	FZ-03 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
5	950-XL-04101	FZ-04 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
6	950-XL-04103	FZ-04 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
7	950-XL-04201	FZ-04 GAS BEACON ACT. - B-400 INDOOR	FLAMMABLE GAS ALARM
8	950-XL-04203	FZ-04 GAS BEACON ACT. - B-300 INDOOR	FLAMMABLE GAS ALARM
9	950-XL-04205	FZ-04 GAS BEACON ACT. - B-200 INDOOR	FLAMMABLE GAS ALARM
10	950-XL-06101	FZ-06 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
11	950-XL-06103	FZ-06 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM
12	950-XL-06201	FZ-06 GAS BEACON ACT. - B-100 INDOOR	FLAMMABLE GAS ALARM
13	950-XL-07101	FZ-07 GAS BEACON ACTIVATION	FLAMMABLE GAS ALARM

File: 1724000821-IN-DS-00004-02.xlsx
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SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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Oddicroft Lane
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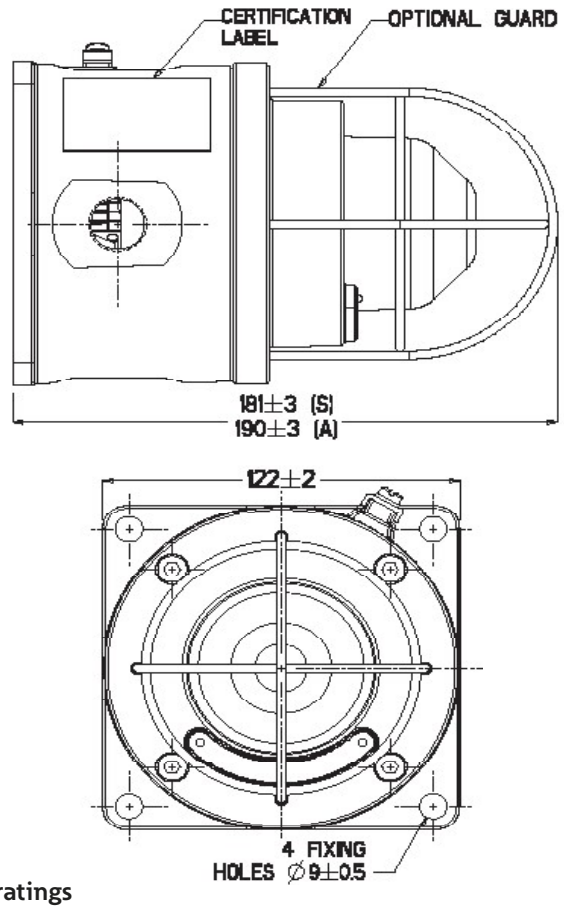
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Ordering requirements

Flash rate: 60fpm

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	A	Y	1B1R	Y	N	R

Model

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Certification

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Voltage

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Lens/LED colour

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Guard

Guard	Code
None	N
Yes	Y

Entries

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Tag/duty

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Options

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

Finish

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

ITEM	Tag	950-XL-03102	: FZ-03 Fire Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10001553	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX00	Miscellaneous

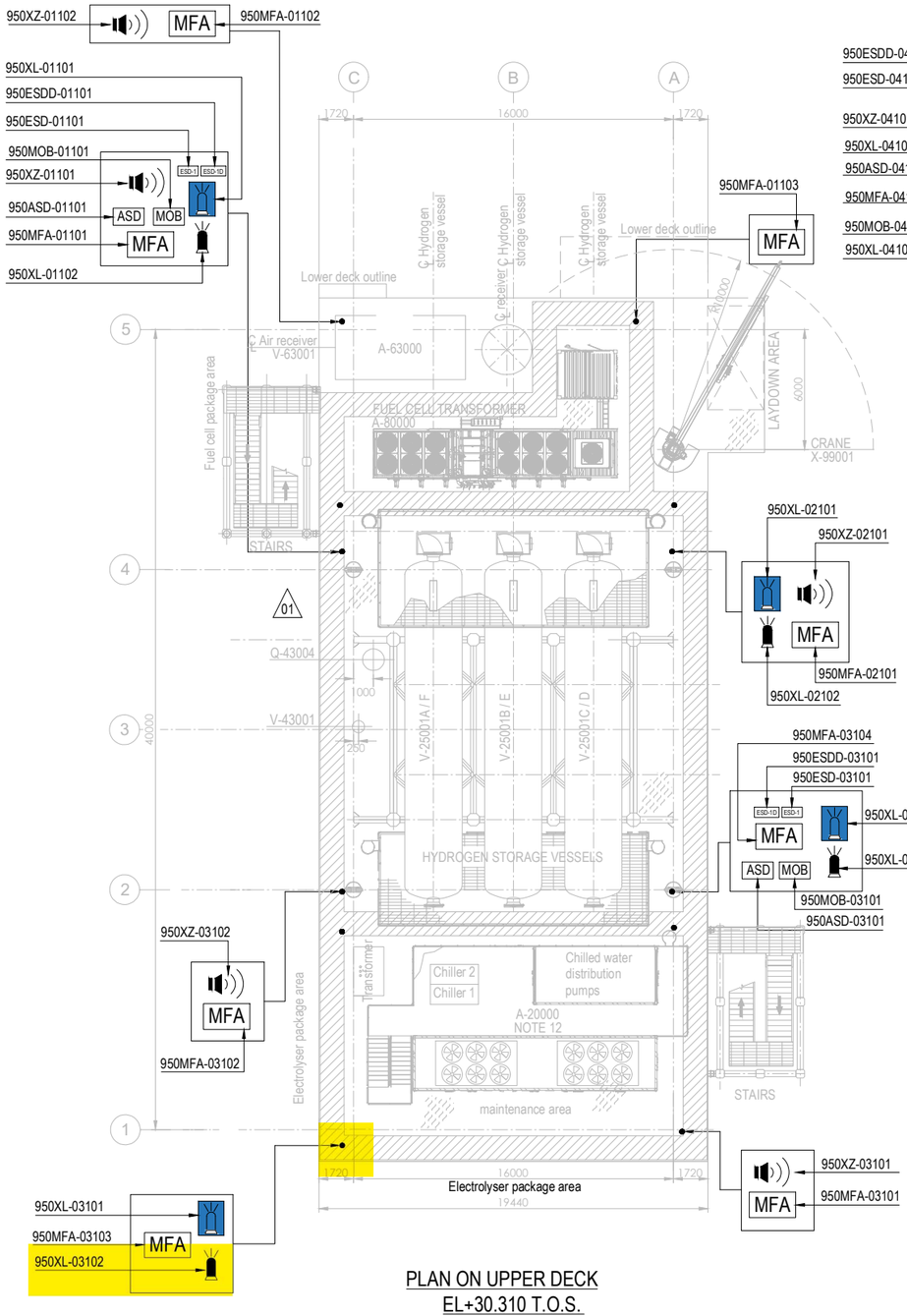
1	Check for mechanical damage.	
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	NA
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	PL
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-02	2024-12-13	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T16:27:43.584Z	PROVERLIS Digitaly signed by Alessio Polo 2024-12-13T11:30:59.512Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



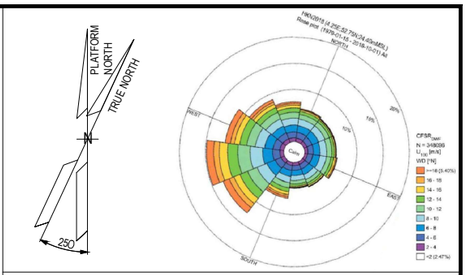
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION

1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

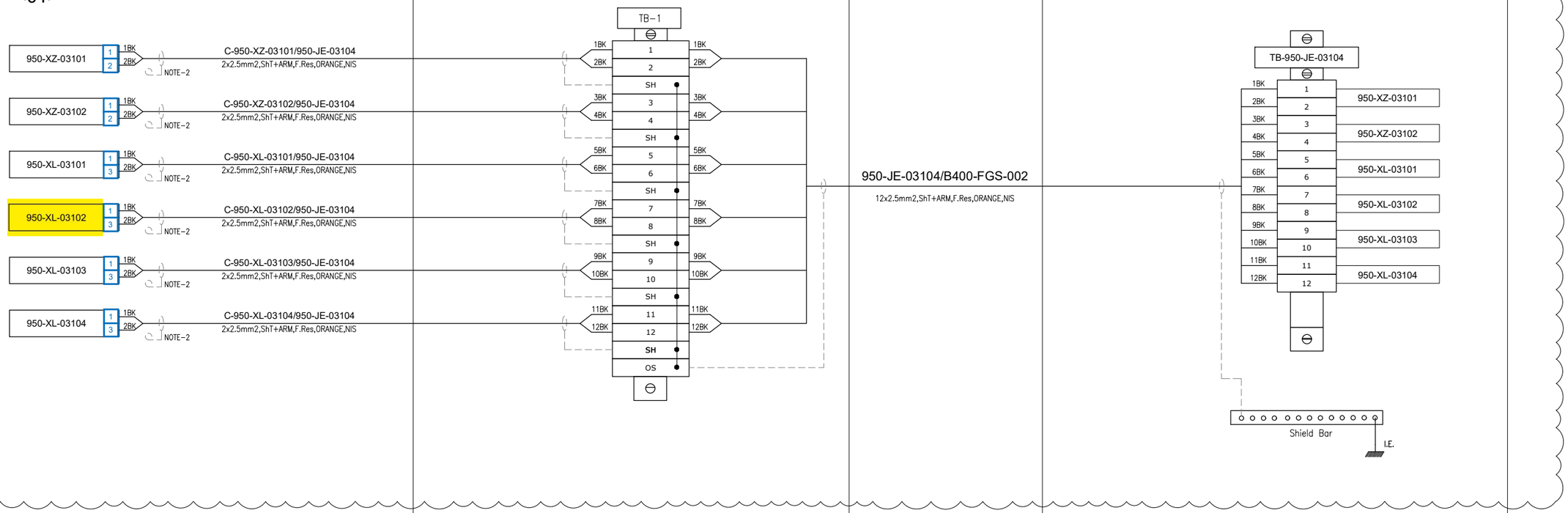
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DRAWING NO. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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

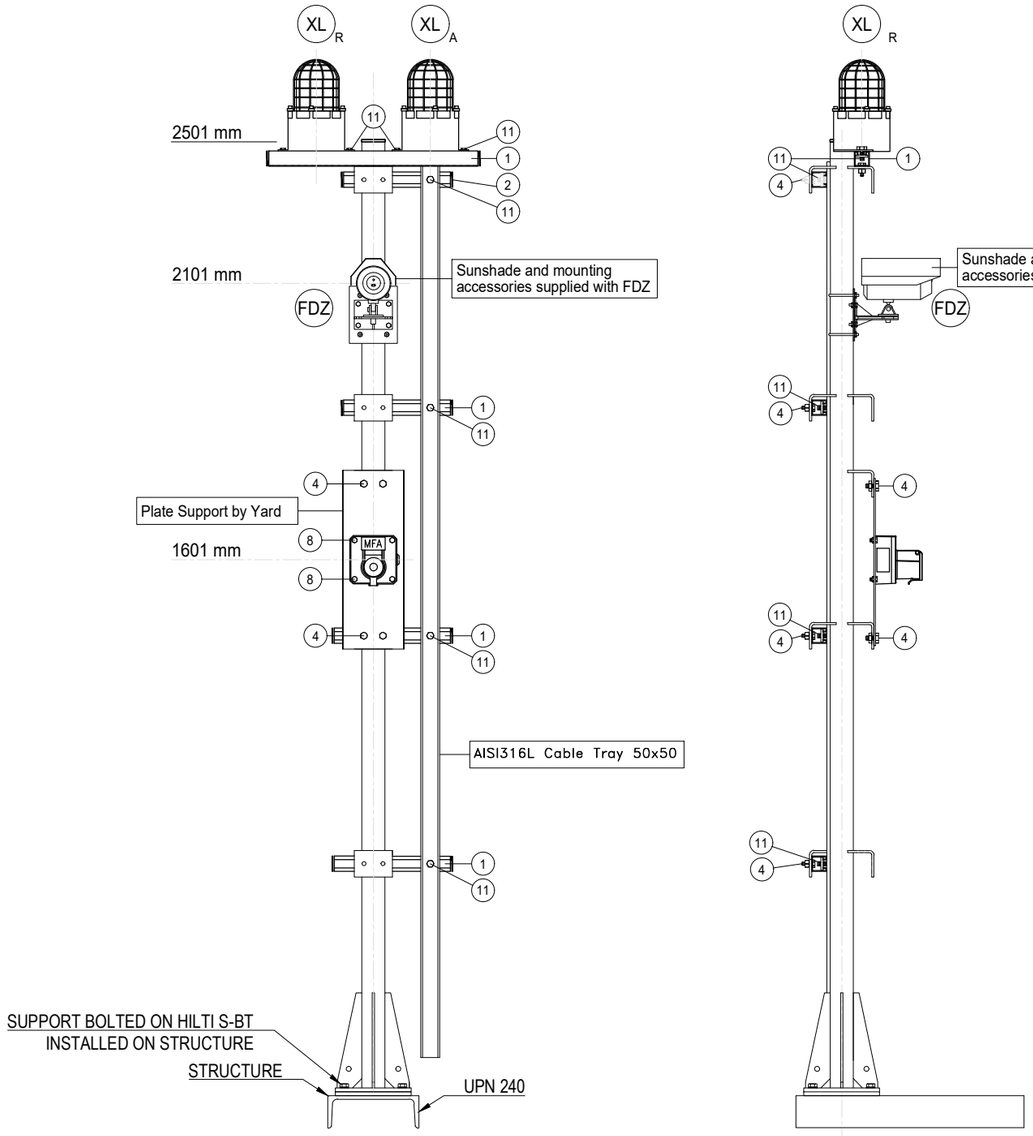
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 066	REV. 01

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

FGS-07

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	14
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	8

POLE	ITEM	DESCRIPTION	TAGNAME
1	XL_A	BEACON - AMBER	950-XL-03101
	XL_R	BEACON - RED	950-XL-03102
	FDZ	FLAME DETECTOR	950-FDZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03103
2	XL_A	BEACON - AMBER	~~950-XL-06102~~ 950-XL-06104
	XL_R	BEACON - RED	950-XL-06103
	FDZ	FLAME DETECTOR	~~950-FDZ-06102~~
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-06102

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_G	03/12/24	G.Randi

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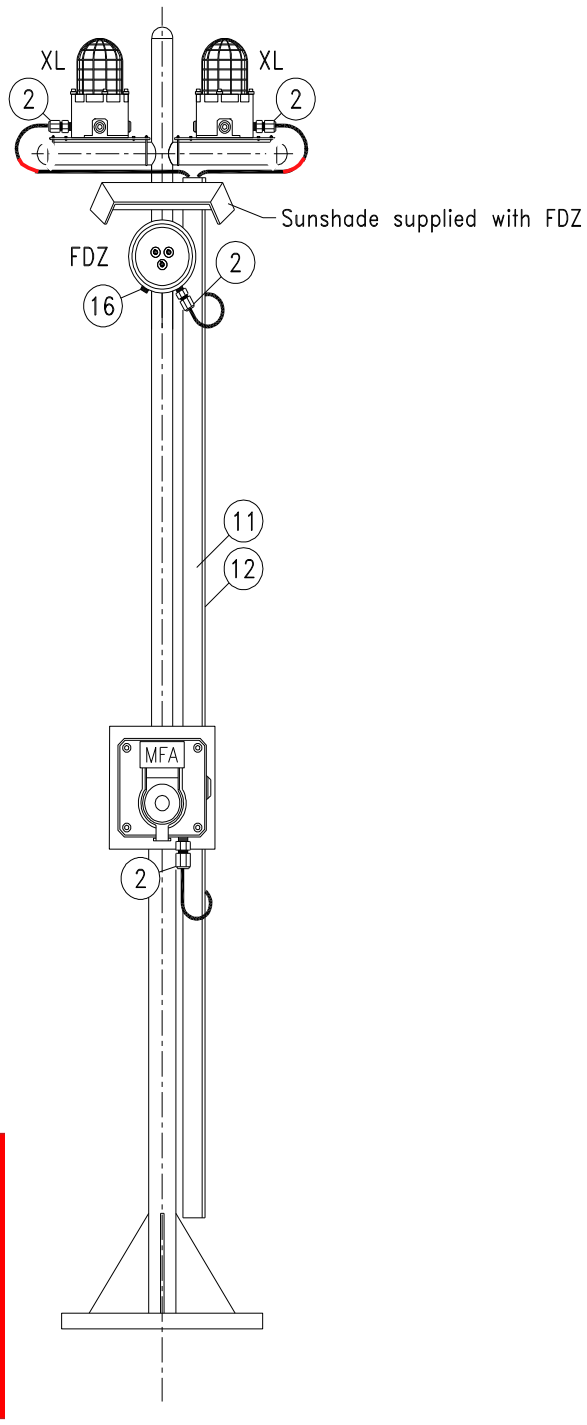
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 026	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-XL-03101 (AMBER)
	950-XL-03102 (RED)
	950-FDZ-03102
	950-MFA-03103
2	950-XL-06104 ~~950-XL-06102~~ (AMBER)
	950-XL-06103 (RED)
	950-FDZ-06102
	950-MFA-06102

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

REV.:	DATE:	SIGNATURE:
2_E	03/12/24	G.Randi

ROSETTI MARINO SpA

NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details, doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

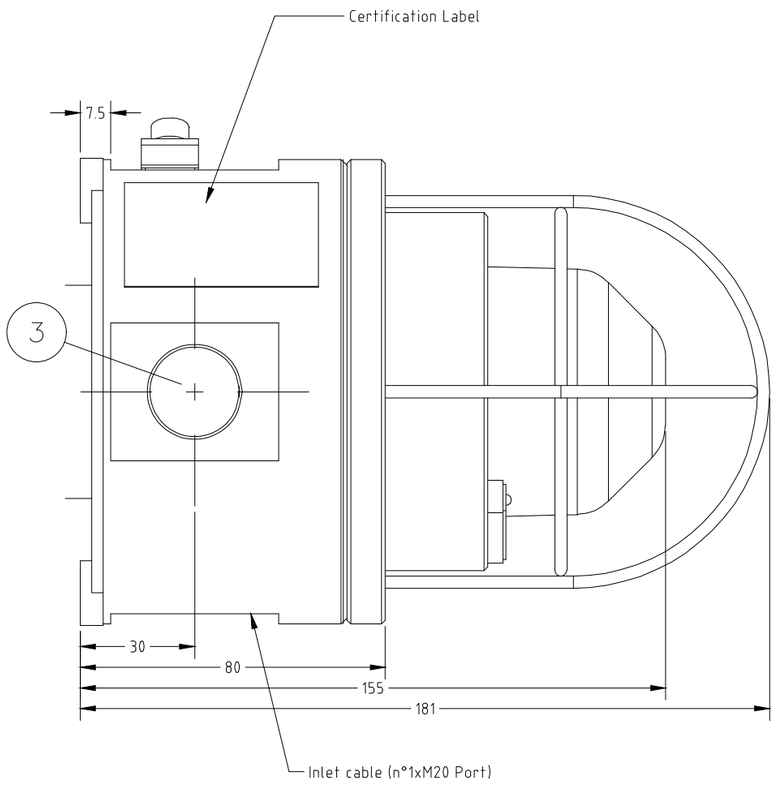
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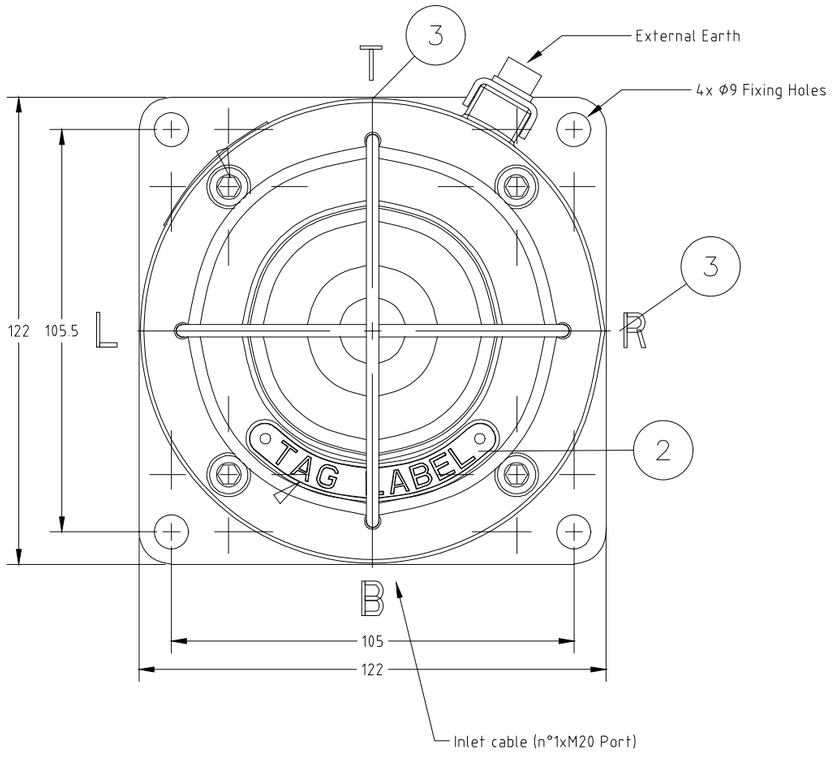
FIRE FLASH BEACON (RED)

ITEM	DESCRIPTIONS	NR
1	Fire Flash Beacon (Red), MEDC SM87LEDSB024RY1B1RYNRZZZ	1
2	Stainless Steel Name Plate	1
3	Stop Plug M20 Ex d AISI 316	2
4		
5		
6		
7		
8		
9		
10		

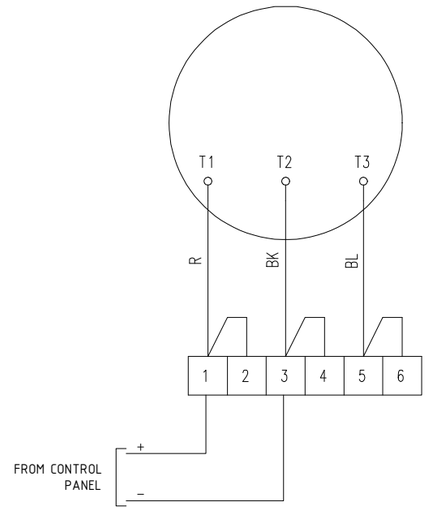
INSTALLATION
QUANTITY

13





WIRING



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FIRE FLASH BEACON (RED)

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FIRE FLASH BEACON (RED) – TAG

POS.	TAG NUMBER
1	950-XL-01102
2	950-XL-02102
3	950-XL-03102
4	950-XL-03104
5	950-XL-04102
6	950-XL-04104
7	950-XL-04202
8	950-XL-04204
9	950-XL-04206
10	950-XL-06102
11	950-XL-06104
12	950-XL-06202
13	950-XL-07102

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
FIRE FLASH BEACON (RED) – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 022

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

FIRE FLASH BEACON (RED)

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-XL-01102	FZ-01 FIRE BEACON ACTIVATION	FIRE ALARM
2	950-XL-02102	FZ-02 FIRE BEACON ACTIVATION	FIRE ALARM
3	950-XL-03102	FZ-03 FIRE BEACON ACTIVATION	FIRE ALARM
4	950-XL-03104	FZ-03 FIRE BEACON ACTIVATION	FIRE ALARM
5	950-XL-04102	FZ-04 FIRE BEACON ACTIVATION	FIRE ALARM
6	950-XL-04104	FZ-04 FIRE BEACON ACTIVATION	FIRE ALARM
7	950-XL-04202	FZ-04 FIRE BEACON ACT. - B-400 INDOOR	FIRE ALARM
8	950-XL-04204	FZ-04 FIRE BEACON ACT. - B-300 INDOOR	FIRE ALARM
9	950-XL-04206	FZ-04 FIRE BEACON ACT. - B-200 INDOOR	FIRE ALARM
10	950-XL-06102	FZ-06 FIRE BEACON ACTIVATION	FIRE ALARM
11	950-XL-06104	FZ-06 FIRE BEACON ACTIVATION	FIRE ALARM
12	950-XL-06202	FZ-06 FIRE BEACON ACT. - B-100 INDOOR	FIRE ALARM
13	950-XL-07102	FZ-07 FIRE BEACON ACTIVATION	FIRE ALARM

File: 1724000821-IN-DS-00004-02.xlsx
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SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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Oddicroft Lane
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March 2024

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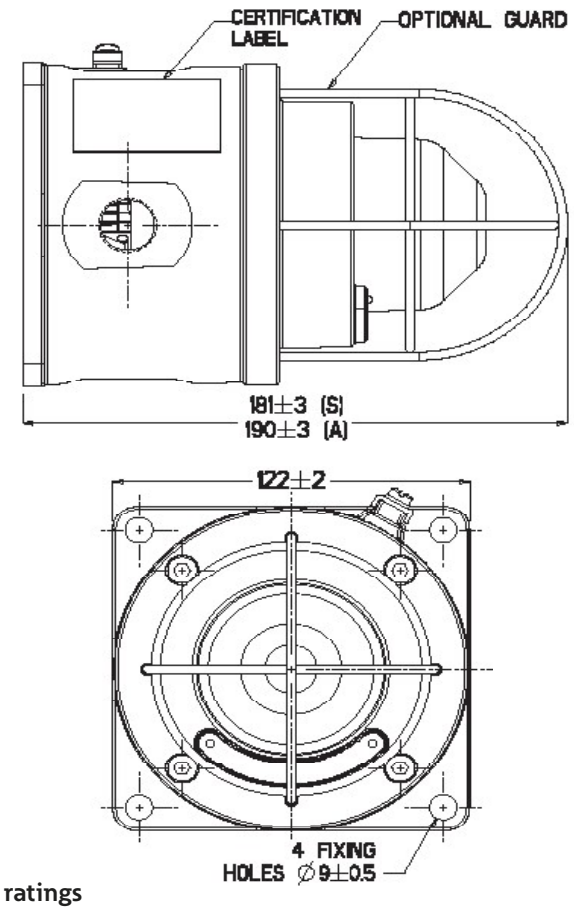
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Ordering requirements

Flash rate: 60fpm

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	R	Y	1B1R	Y	N	R

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Guard	Code
None	N
Yes	Y

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

ITEM	Tag	950-XZ-03101	: FZ-03 Sounder Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10001558		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX00 Miscellaneous

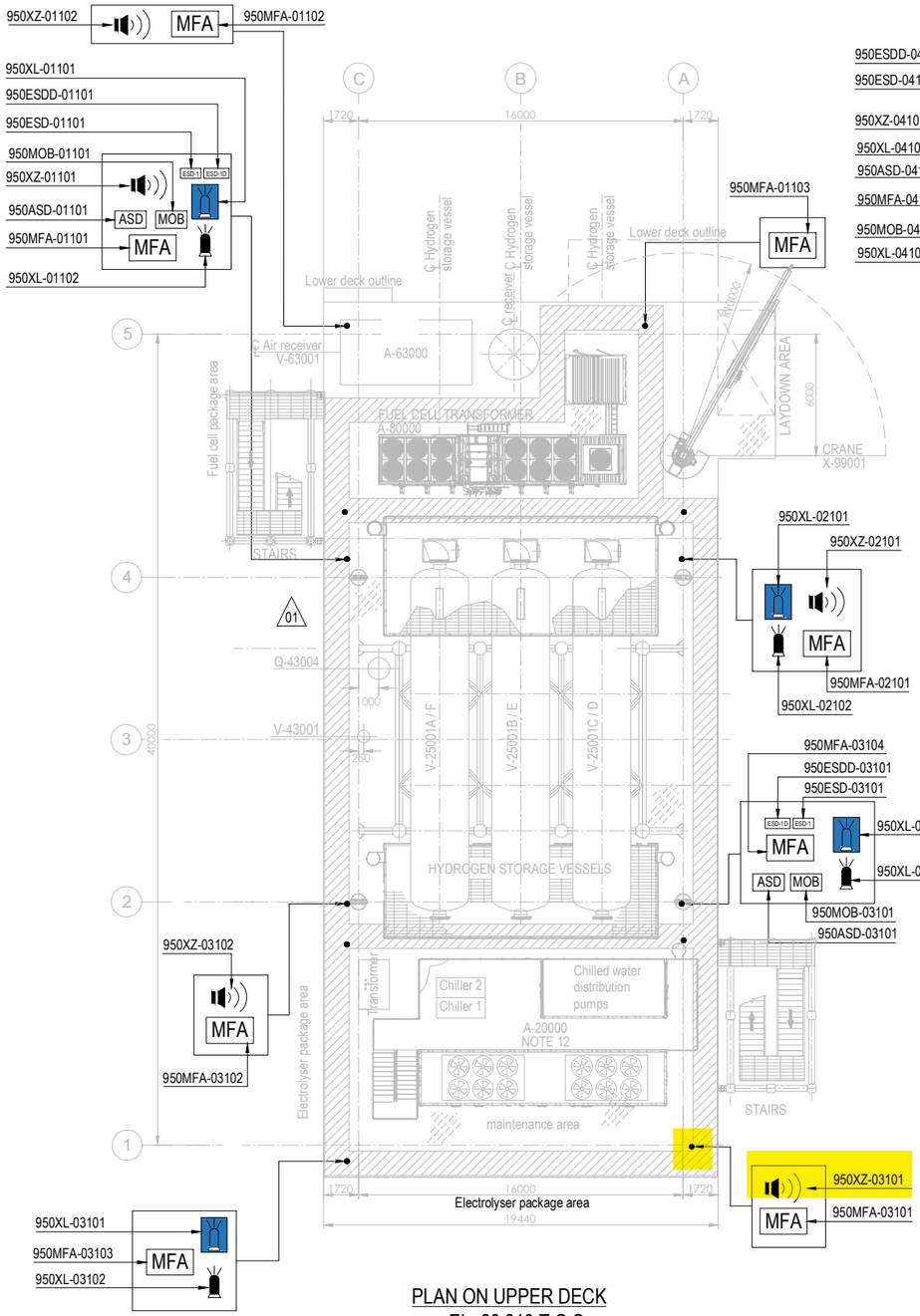
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	OK
5	Check that piping connections provide the block & bleed facility (if required).	OK
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	PL
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	PL
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-11-29	2024-12-05	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-29T11:01:10.371Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-05T14:52:38.534Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



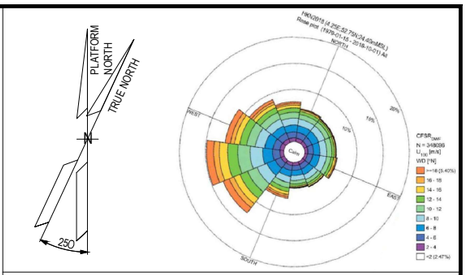
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-80000	FUEL CELL	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-85000	BESS	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-50000	WATER TREATMENT PACKAGE	V-63001	AIR RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	V-64001	NITROGEN RECEIVER
Q-43004	HYDROGEN VENT	X-99001	CRANE
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	11		FIRE BEACON (XL) COLOR: RED	8
MOB	MAN OVER BOARD (MOB)	4		FLAMMABLE GAS RELEASE BEACON (XL) COLOR: AMBER	8
ASD	ABANDON SHUTDOWN (ASD)	4	ESD-1	ESD-1 PUSH BUTTON (ESD)	4
MFA	MANUAL FIRE ALARM (MFA)	16	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	4



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

ELEVATION
1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACON ARE 2.4/2.5M

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-1-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 002	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03104	No.	MARSHALLING CABINET B400-FGS-002

<01>

INSTRUMENTS		JUNCTION BOX 950-JE-03104	MULTICABLE No.	MARSHALLING CABINET B400-FGS-002
950-XZ-03101	C-950-XZ-03101/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	TB-1 1, 2	950-JE-03104/B400-FGS-002 12x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	TB-950-JE-03104 1
950-XZ-03102	C-950-XZ-03102/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	3, 4		2
950-XL-03101	C-950-XL-03101/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	5, 6		3
950-XL-03102	C-950-XL-03102/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	7, 8		4
950-XL-03103	C-950-XL-03103/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	9, 10		5
950-XL-03104	C-950-XL-03104/950-JE-03104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	11, 12, SH, OS		6
				7
				8
				9
				10
				11
				12

NOTE-2

950-XZ-03101
950-XZ-03102
950-XL-03101
950-XL-03102
950-XL-03103
950-XL-03104

Shield Bar

I.E.

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03104

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

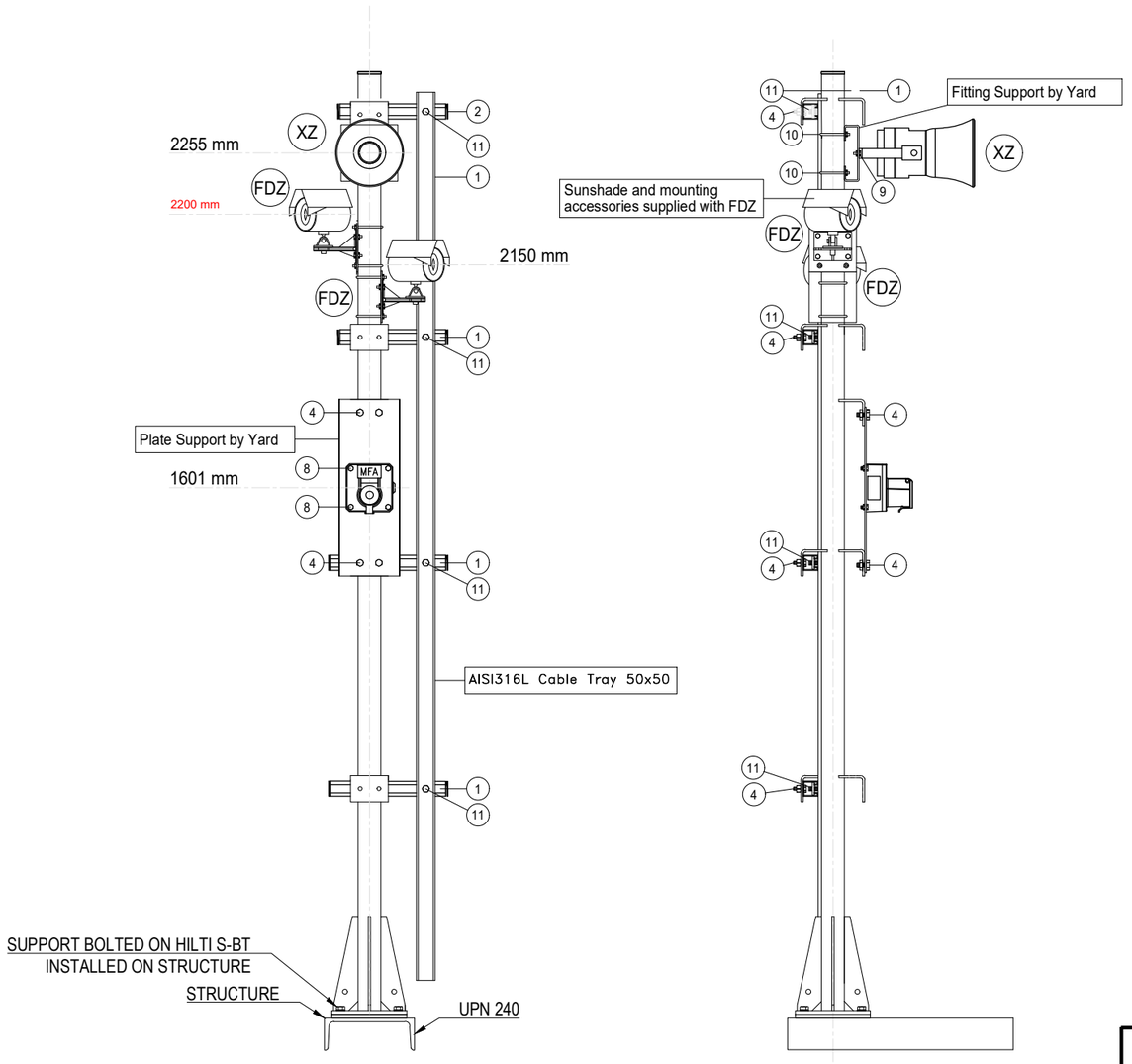
A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 066	REV. 01

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

FGS-05

DRAWING NO. 123A90-DDL-IN-DD-40017

REV. 00



POS.	DESCRIPTION	Q.TY
1	AISI 316L U-CHANNEL 41x41	5m
2	LDPE PLUG FOR U-CHANNEL 41x41	10
4	AISI 316L BOLT M10x35 + NUT M10 + WASHER M10	12
8	AISI 316L BOLT M8x35 + NUT M8 + WASHER M8	4
9	~~AISI 316L BOLT M6x35 + NUT M6 + WASHER M6~~	2
10	AISI 316L 2" U BOLT M8+ N.2 NUT M8 + N.2 WASHER M8	2
11	AISI 316L SPRING NUT M6 FOR U-CHANNEL 41X41 + BOLT M6 + WASHER M6	4

POLE	ITEM	DESCRIPTION	TAGNAME
1	FDZ	FLAME DETECTOR	950-FDZ-01102
	FDZ	FLAME DETECTOR	~~950-FDZ-02101~~
	XZ	SOUNDER	950-XZ-01102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-01102
2	FDZ	FLAME DETECTOR	950-FDZ-02102
	FDZ	FLAME DETECTOR	950-FDZ-03101
	XZ	SOUNDER	950-XZ-03102
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03102
3	FDZ	FLAME DETECTOR	950-FDZ-03103
	FDZ	FLAME DETECTOR	~~950-FDZ-02104~~ 950-FDZ-02102
	XZ	SOUNDER	950-XZ-03101
	MFA	MANUAL CALL POINT CONNECTED TO FGS	950-MFA-03101

NOTES

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	02/09/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	11/07/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DD-40017**

REV.:	DATE:	SIGNATURE:
1_G	03/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

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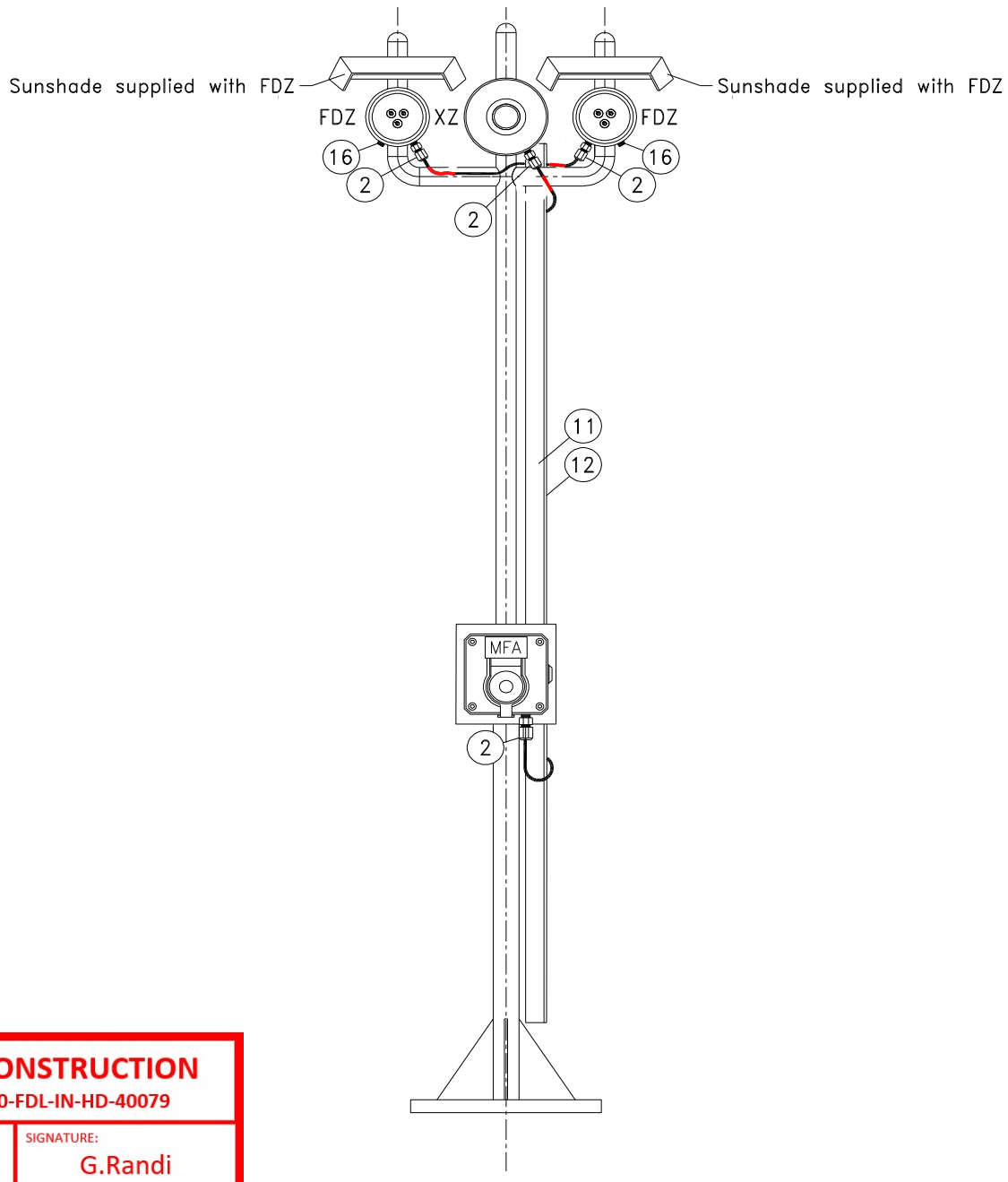
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT INSTALLATION DETAILS
FIRE & GAS DEVISES ON POLE

CONTRACT NO./TITLE			SCALE /
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 11/07/2024

A3	DRAWING NO. 123A90-DDL-IN-DD-40017	SHEET 024	REV. 01

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



INSTRUMENT TAG	
1	950-FDZ-01102
	950-XZ-01102
	~~950-FDZ-02101~~
	950-MFA-01102
2	950-FDZ-02102
	950-XZ-03102
	950-FDZ-03101
	950-MFA-03102
3	950-FDZ-03103
	950-XZ-03101
	950-FDZ-02104
	950-MFA-03101

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

REV.:	DATE:	SIGNATURE:
2_E	03/12/24	G.Randi

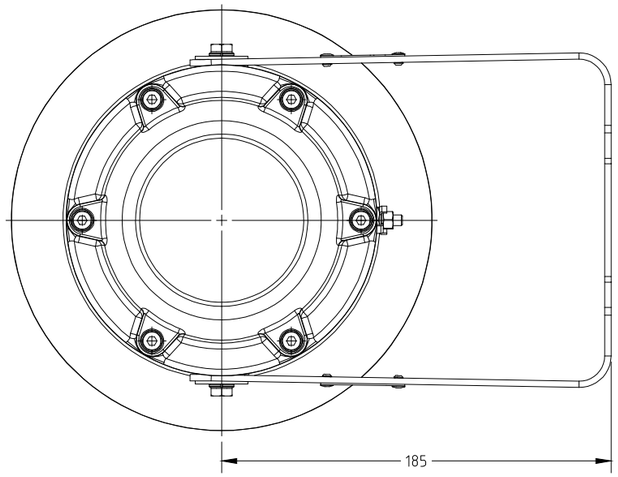
ROSETTI MARINO SpA

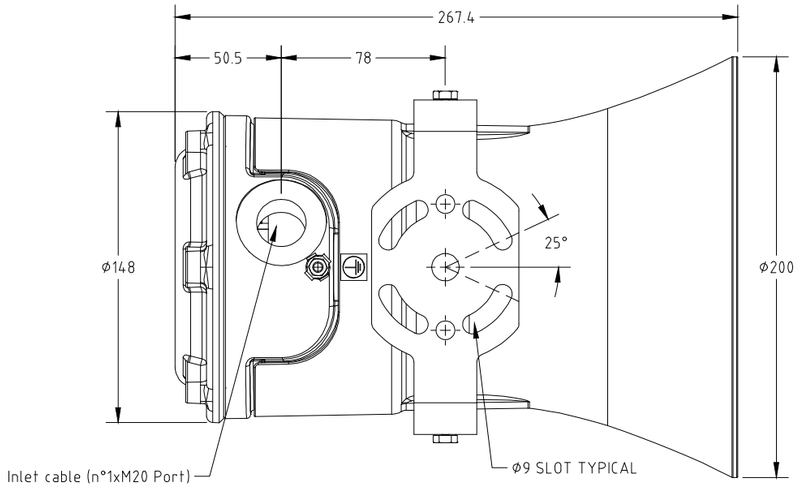
NOTE: Mechanical support is only indicative in this drawing, for real mehanical support refer to Instrument Installation Details doc. n. 123A90-DDL-IN-DD-40017 - Instrument Installation Details

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
16		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M25	2
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	4

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SOUNDER





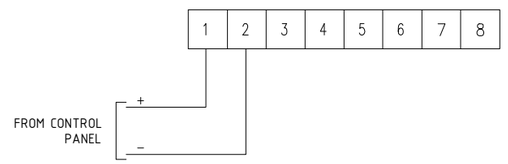
ITEM	DESCRIPTIONS	NR
1	Sounder, MEDC DM3BMSD048DT1BNR	1
2		
3		
4		
5		
6		
7		
8		
9		
10		

INSTALLATION QUANTITY

17

NOTE:
DUTY LABEL: EMERGENCY SHUTDOWN ALARM

WIRING



FORES ENGINEERING

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REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
SOUNDER

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 023

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

SOUNDER – TAG

POS.	TAG NUMBER
1	950-XZ-01101
2	950-XZ-01102
3	950-XZ-02101
4	950-XZ-03101
5	950-XZ-03102
6	950-XZ-04101
7	950-XZ-04102
8	950-XZ-04201
9	950-XZ-04202
10	950-XZ-04203
11	950-XZ-05101
12	950-XZ-05102
13	950-XZ-05103
14	950-XZ-05104
15	950-XZ-06101
16	950-XZ-06201
17	950-XZ-07101

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	10/10/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	DB	MO	SM	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	DB	MO	SM	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT
SOUNDER – TAG

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 024

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1724000821-IN-DA-00003 Rev. 02

SOUNDER

POS.	TAG NUMBER	SERVICE	DUTY LABEL
1	950-XZ-01101	FZ-01 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
2	950-XZ-01102	FZ-01 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
3	950-XZ-02101	FZ-02 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
4	950-XZ-03101	FZ-03 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
5	950-XZ-03102	FZ-03 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
6	950-XZ-04101	FZ-04 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
7	950-XZ-04102	FZ-04 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
8	950-XZ-04201	FZ-04 SOUNDER ACT. - B-400 INDOOR	EMERGENCY SHUTDOWN ALARM
9	950-XZ-04202	FZ-04 SOUNDER ACT. - B-300 INDOOR	EMERGENCY SHUTDOWN ALARM
10	950-XZ-04203	FZ-04 SOUNDER ACT. - B-200 INDOOR	EMERGENCY SHUTDOWN ALARM
11	950-XZ-05101	FZ-05 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
12	950-XZ-05102	FZ-05 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
13	950-XZ-05103	FZ-05 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
14	950-XZ-05104	FZ-05 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
15	950-XZ-06101	FZ-06 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM
16	950-XZ-06201	FZ-06 SOUNDER ACT. - B-100 INDOOR	EMERGENCY SHUTDOWN ALARM
17	950-XZ-07101	FZ-07 SOUNDER ACTIVATION	EMERGENCY SHUTDOWN ALARM

File: 1724000821-IN-DS-00004-02.xlsx
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DB3BM sounders range up to 116dB

Ex d, weatherproof



Overview

The DB3BM is a high power explosion proof sounder, introduced as a replacement for the current DB1 / DB1H with improved functionality and performance. Certified for use in a wide range of temperatures from -60°C to +85°C the Ex enclosure is manufactured in either marine grade alloy or stainless steel with a rugged thermoplastic flare providing a corrosion free and aesthetically pleasing product.

Capable of producing 116 dB @ 1m and with a range of pre-recorded tones, the DB3BM includes an integral volume control which is ideal when a lower output is required.

The unit is provided with versatile control options allowing compatibility with a wide range of control methods and PLCs.

The standard DC unit provides 3 tone stages, each stage has 28 tones available which can be independently selected. The unit can be controlled by reversing the polarity of the power supply (2 stage) or providing a common negative and switching between multiple positive supplies.

The DB3BM proves its versatility by additionally being able to work with a common positive supply and switching the negatives. The tone stages of the DB3BM can also be controlled via voltage free contacts provided by a control panel.

The flexibility of the range continues with a wide range of supply voltages. The short flare option is a worthy addition to the range offering a high SPL in a compact unit.

Features

- UKEX / ATEX / IECEx
  Ex db IIC T4/T5/T6 Gb
  Ex tb IIIC T4/T5/T6 Db
- Certified temperature: –60°C to +85°C
- IP66 & IP67 (terminal only)
- Up to 116 dB output @ 1 m
- Integral volume control
- 28 tones, user selectable
- 3 stage unit remotely switchable
- Tones can be programmed to customer's specification
- DC supply voltage between 12 V and 48 V
- End of line resistor option
- Sounder & beacon combination units available, for further details contact MEDC
- Ex enclosure – marine grade alloy or stainless steel
- Flare - high impact thermoplastic polyester
- Stainless steel mounting bracket and cover screws
- Mounting bracket has ratchet facility as standard
- Swivel bracket standard on Stainless steel unit, optional on Alloy units



Stainless steel body, short flare version

ATEX IECEx UKCA

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
United Kingdom
NG17 5FB

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All other trademarks are property of their respective owners.

Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

ATEX Ex db	Cert. no. UL 21 ATEX02559X. Certified to: EN IEC 60079-0, EN 60079-1, 31 Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db, IP66 (IP65 short flare)
IECEx Ex db	Cert. no. IECEx ULD 21.0017X. Certified to: IEC60079-0,1,31 Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db, IP66 (IP65 short flare)
UKEX Ex db	Cert. no. UL21UKEX2209X. Certified to: EN IEC 60079-0, EN 60079-1, 31 Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db IP66 (IP65 short flare)
Safe Area	EN 61010-1, EN 60529, EN61000-6

Specifications

Material	Ex enclosure – marine grade alloy or stainless steel Flare - flame retardant, high impact, UV stable, thermoplastic polyester (UV stability tested to ISO 4892 part 3) Hardware - bracket, fixings and captive cover screws in 316 stainless steel
Fire retardancy	Outer flare - thermoplastic polyester. V0 flammability rating
Finish	Body – alloy: painted black. Stainless steel: painted black. Flare - natural black, natural red or painted as specified
Voltage	DC: 12 - 48 V. AC: Up to 254 V. if using EOL resistor/s the maximum power dissipation must be limited to 3 W.
Weight	Alloy - 4.4 kg, stainless steel 8.35 kg based on long flare DC unit
Ingress protection	IP66 & IP67 (terminal only). IP65 short flare
Entries	Up to 2 x M20 or M25 or ½"or ¾" NPT. Blanking plug available
Terminals	AC: 4 x 1.5mm² (loop in / out power), 3 x 2.5mm² (tone selection) (standard unit only) DC: 8 x 2.5mm² (8 for loop in / out power and tone selection) (standard unit only)
Mounting arrangement	Stainless steel bracket with ratchet facility, optional swivel bracket available. Swivel standard on stainless steel unit
Labels	Optional duty and tag labels available
Tone information	28 tones per stage. Additional custom tones available (contact MEDC) Suitable for use with 200 Hz tones
Relative Humidity	99% Non-condensing

Tone activation and selection

Voltage	Unit	No.of stages	Tone activation	Tone selection
DC	Standard	1	Apply power	1 x DIP switch
		2	Reverse polarity	2 x DIP switches
			Common -ve with 2 +ve supplies	2 x DIP switches
			*Common +ve with 2 -ve supplies	2 x DIP switches
		3	Common -ve with 3 +ve supplies	3 x DIP switches
	Alternative tone activation (Option M)	2	*Common -ve with 2 +ve supplies	2 x DIP switches
		3	Common +ve with 3 -ve supplies	3 x DIP switches
	Alternative tone activation (remote) (Option R)	1-5	Volt free activation (remote switching)	1 x DIP switch for stage 1. Tone pre-selected for subsequent stages
AC	Standard	1	Apply power	1 x DIP switch
	Alternative tone activation (remote) (Option R)	1-2	Volt free activation (remote switching)	1 x DIP switch for stage 1. Tone preselected for the 2nd stage

*Reverse polarity line monitoring can be used with common positive or negative switching to give up to 2 operational stages and a 3rd monitoring connection. An EOL resistor can be fitted as shown in the technical manual. All connection details are shown in the technical manual.

Current consumption: Based on a continuous 970Hz tone

Voltage	Current for IIC unit	Current for IIIC unit
12 Vdc	700 mA	716 mA
24 Vdc	329 mA	339 mA
48 Vdc	171 mA	173 mA
110 Vac	115 mA	122 mA
120 Vac	106 mA	113 mA
220 Vac	59 mA	63 mA
230 Vac	52 mA	55 mA
240 Vac	55 mA	58 mA
254 Vac	59 mA	63 mA

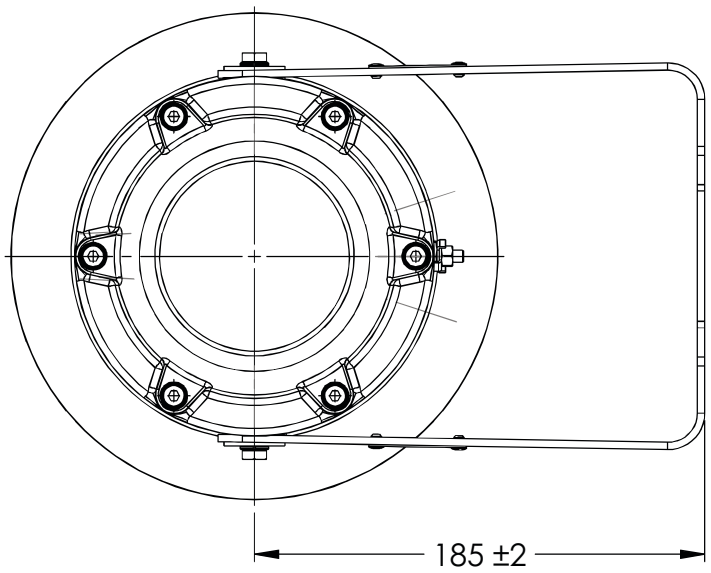
Certified temperature	Ex d/UL min	Max
	-60°C	+85°C

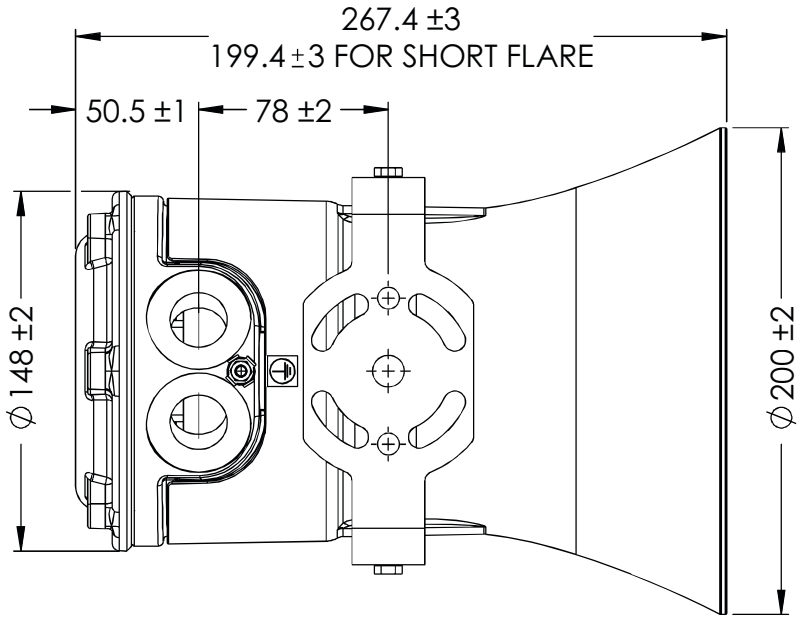
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

Max output (dB) 1400Hz @ 1m	Short Flare	Long Flare
	113 dB	116 dB

For Labels and Entries select any option as required. For Options select either (N) None or (E) EOL as required
Tolerance +/-3dB. Please see the technical manual for tone specific SPL values

General arrangement drawing (all dimensions in mm)





Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model: DB3BM

Material: S

Finish	Code
Alloy	A
Stainless Steel	S

Ex Certification: D

Ex Certification	Code
UKEX/ATEX Ex d	D
IECEx Ex d	J
Weatherproof	W

Voltage: 048

Voltage	Code
12-48 Vdc	048‡
110 Vac	110
120 Vac	120*
220 Vac	220
230 Vac	230
240 Vac	240*
254 Vac	254

*Complies with UL regulated power supply requirements

Labels: DT

Labels	Code
None	N
Duty	D*
Tag	T*

*Please specify

Entries: 1B

Entries	Code
1 x M20	1B
2 x M20	2B
2 x M20 inc 1 x plug	2BP
1 x ½"NPT	1C
2 x ½" NPT	2C
2 x ½" NPT inc 1 x plug	2CP
1 x M25	1D
2 x M25	2D
2 x M25 inc 1x plug	2DP
1 x ¾" NPT	1E
2 x ¾" NPT	2E
2 x ¾" NPT inc 1x plug	2EP

Options: N

Options	Code
None	N
Swivel bracket	B‡
EOL	E*
Alternative tone activation	M**
Volt free activation (remote)	R**
Short flare	S
Custom tones (not std 27)	TΔ

‡ Alloy only - stainless steel has swivel as standard
*Specify value max power dissipation is 3W
**These options cannot be selected together
ΔSpecify details

Finish: R (RAL 3020)

Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*Please specify

ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-950-FDZ-03101/950-JE-03102	:	FLAME DETECTOR / MARSHALLING PCS	Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	:	F&G Devices FZ-03 (Electrolyser Area)	Module	UD	
TASK	code	C10002418	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	1X3X2,5 mm2	Color	ORANGE
From	950-FDZ-03101	To	950-JE-03102		

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.	PL
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.	PL
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		0,3	Ω
	SCREEN		0,3	Ω
	EARTH		NA	Ω
	ARMr		0,3	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

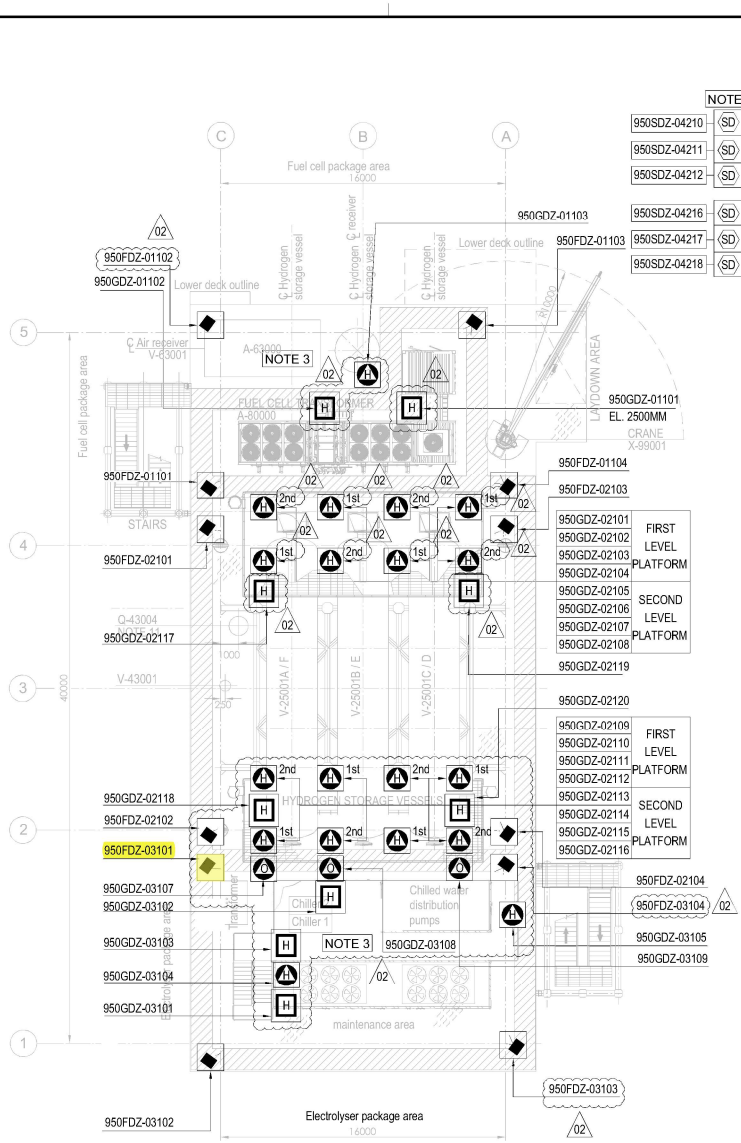
TESTING INSTRUMENTS USED

TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N7722/24 10/07/2024

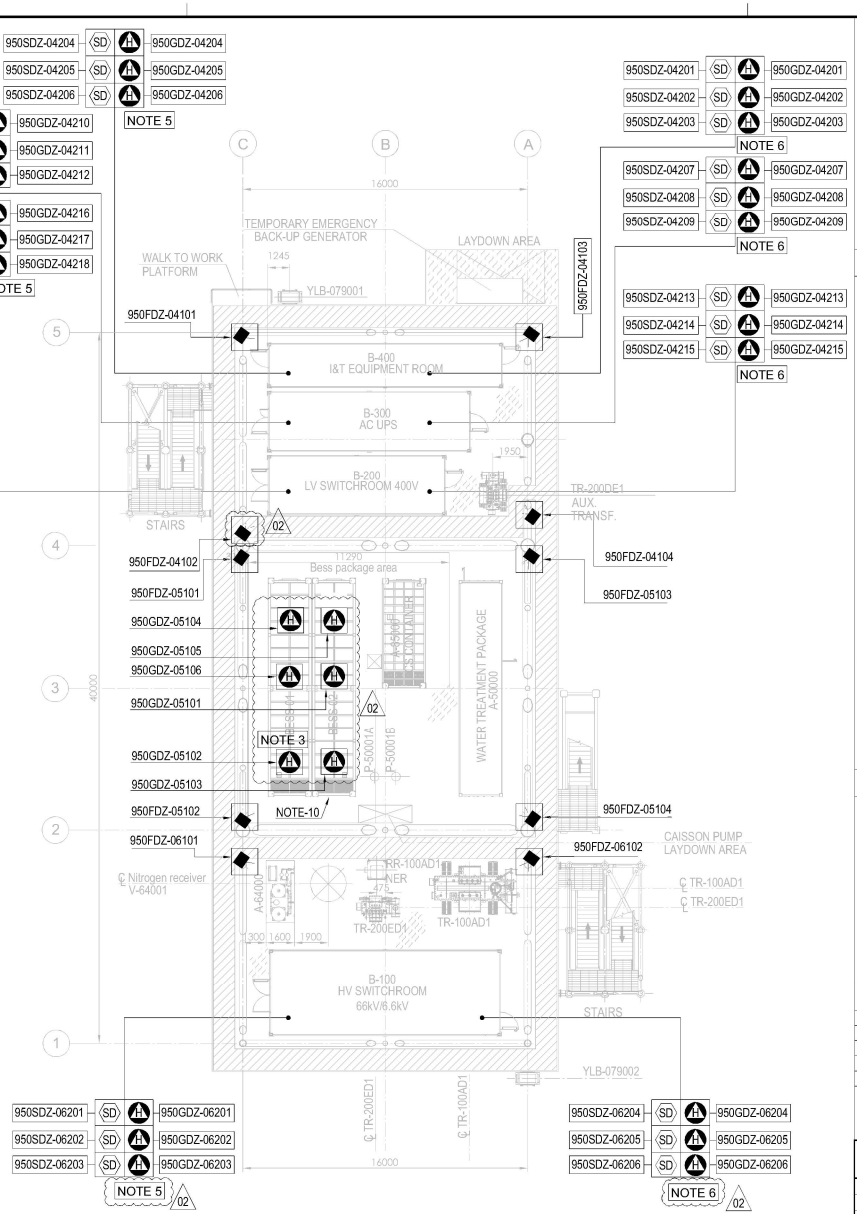
Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-12-30	2025-01-13	
Signature	Digitaly signed by Francesco Zucca 2024-12-30T15:51:19.717Z	Digitaly signed by Alessio Polo 2025-01-13T16:51:03.307Z	

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02



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

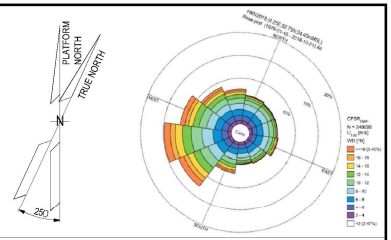


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION

FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

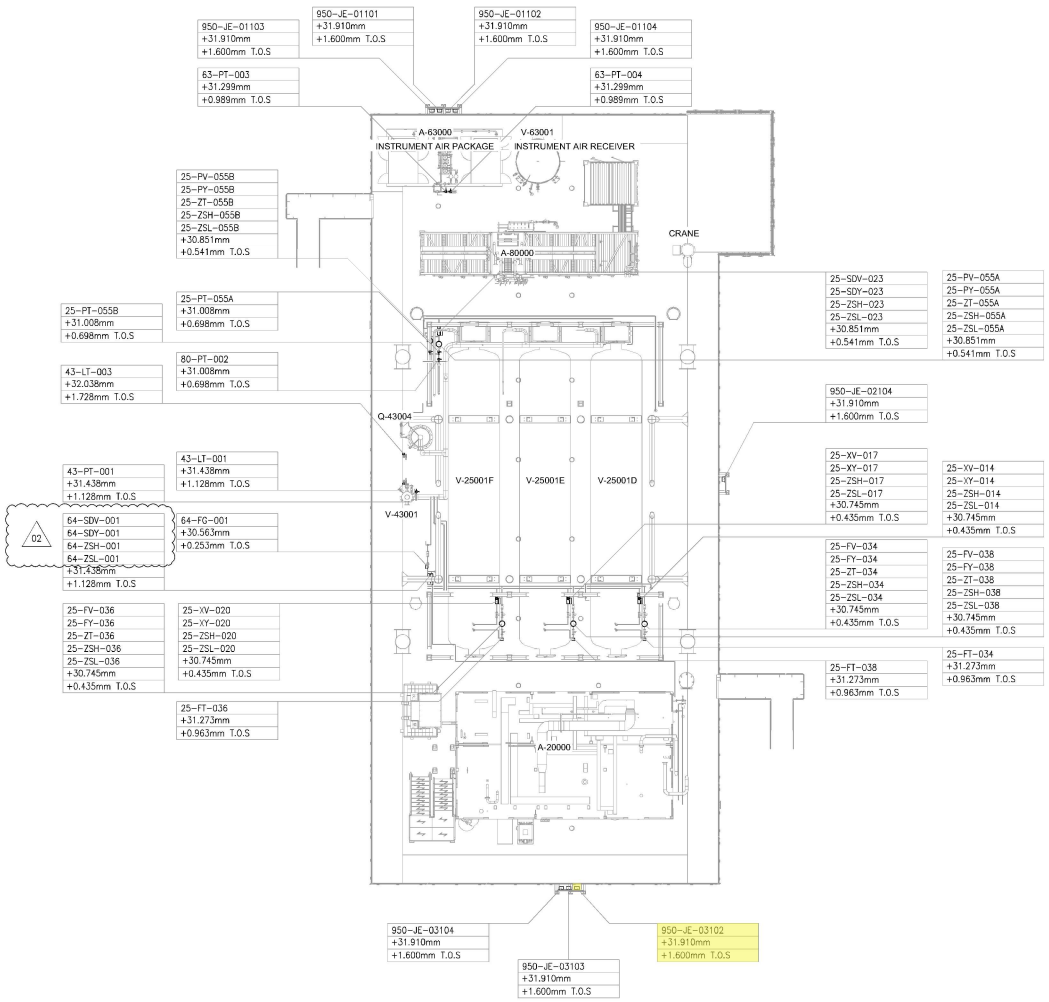
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

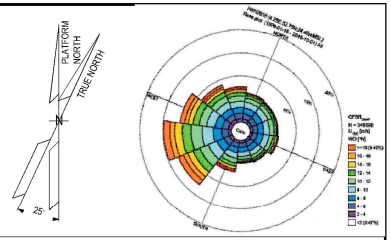
REV. 01



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03102	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

Note: link between terminals 3, 4 and 12 to be wired on site

950-FDZ-03101 — 1 RD, 3 WH, 2 BK — NOTE-2

C-950-FDZ-03101/950-JE-03102
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03102 — 1 RD, 3 WH, 2 BK — NOTE-2

C-950-FDZ-03102/950-JE-03102
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03103 — 1 RD, 3 WH, 2 BK — NOTE-2

C-950-FDZ-03103/950-JE-03102
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03104 — 1 RD, 3 WH, 2 BK — NOTE-2

C-950-FDZ-03104/950-JE-03102
3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

RD WH BK	1	RD WH BK — TR1
	2	
	3	
	SH	
RD WH BK	4	RD WH BK — TR2
	5	
	6	
	SH	
RD WH BK	7	RD WH BK — TR3
	8	
	9	
	SH	
RD WH BK	10	RD WH BK — TR4
	11	
	12	
	SH	
SPARE	13	RD WH BK — TR5
	14	
	15	
	SH	
SPARE	16	RD WH BK — TR6
	17	
	18	
	SH	
	OS	

950-JE-03102/B400-FGS-003
~~950-JE-03102/B400-FGS-002~~
6x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03102

TR1 — Shield Bar	RD WH BK — 1	
	2	
	3	950-FDZ-03101
TR2 — Shield Bar	RD WH BK — 4	
	5	
	6	950-FDZ-03102
TR3 — Shield Bar	RD WH BK — 7	
	8	
	9	950-FDZ-03103
TR4 — Shield Bar	RD WH BK — 10	
	11	
	12	950-FDZ-03104
TR5 — Shield Bar	RD WH BK — 13	
	14	SPARE
	15	
TR6	RD WH BK — 16	
	17	SPARE
	18	

Shield Bar — I.E.

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

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03102

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 037	REV. 01

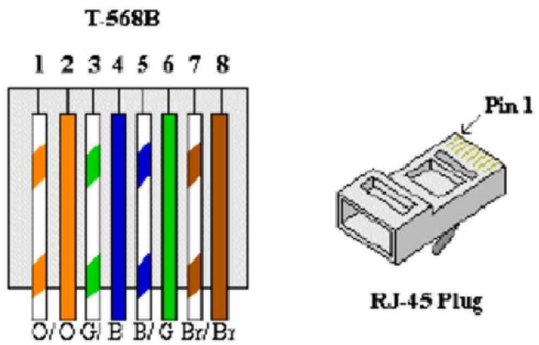
File Name : 123A90-DDL-IN-DG-40016_Rev.01

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:



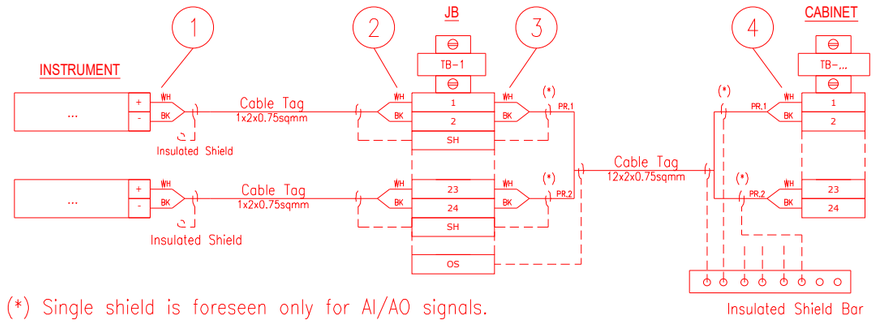
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

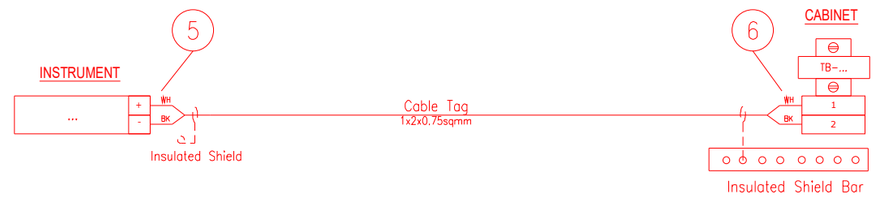
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY 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:

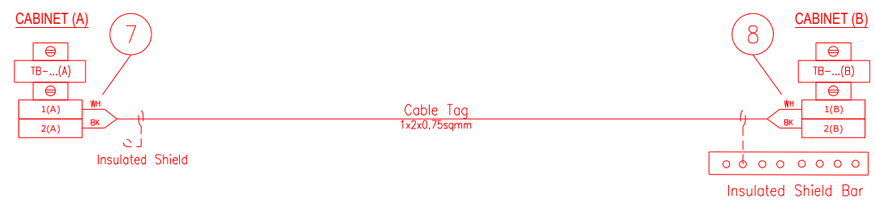
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



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_O	08/01/25	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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40015	003	01

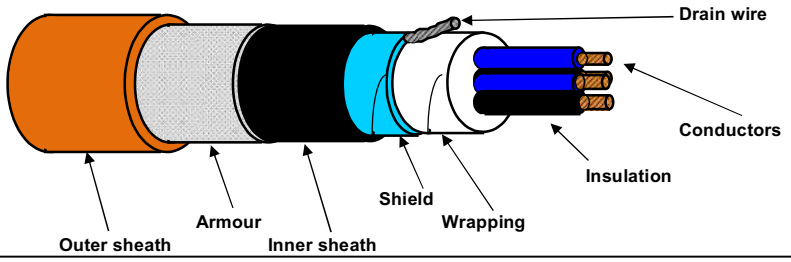
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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-950-FDZ-03101/950-JE-03102	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-FDZ-03101	Flame Detector	Upper Deck		950-JE-03102	AI JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-20N / U-SEC-20M

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-950-FDZ-03102/950-JE-03102 : FLAME DETECTOR / MARSHALLING PCS				Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10002419		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	1X3X2,5 mm2	Color	ORANGE
From	950-FDZ-03102	To	950-JE-03102		

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.	PL
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		0,4	Ω
	SCREEN		0,4	Ω
	EARTH		NA	Ω
	ARMr		0,4	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

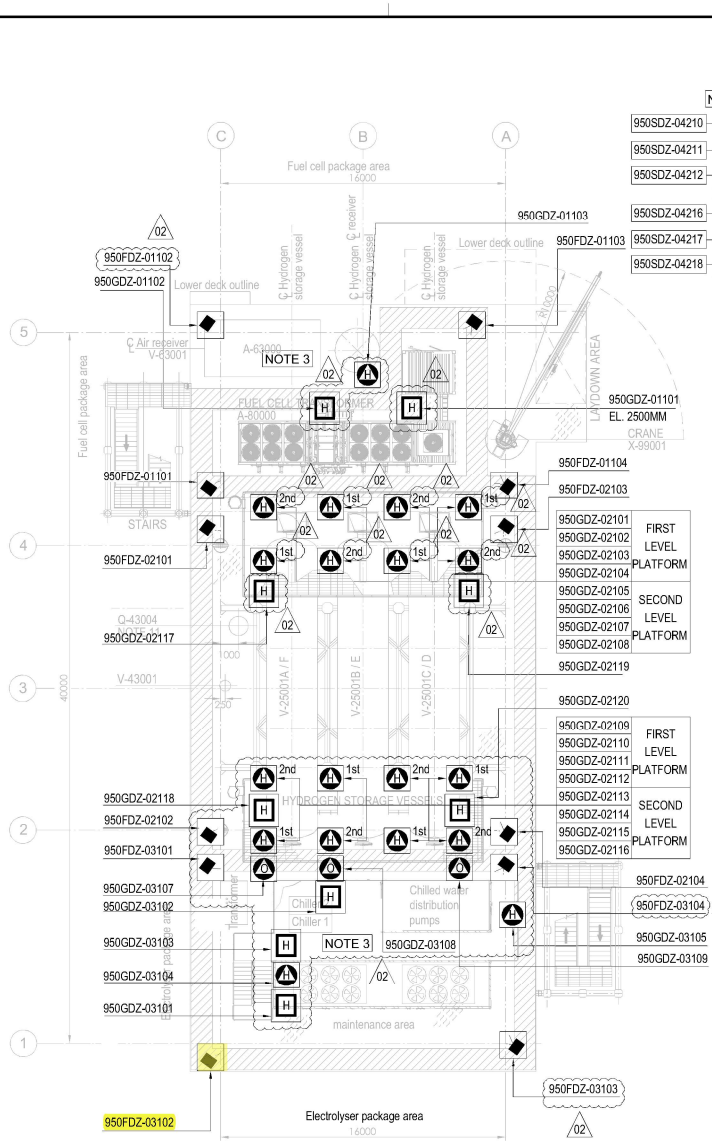
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

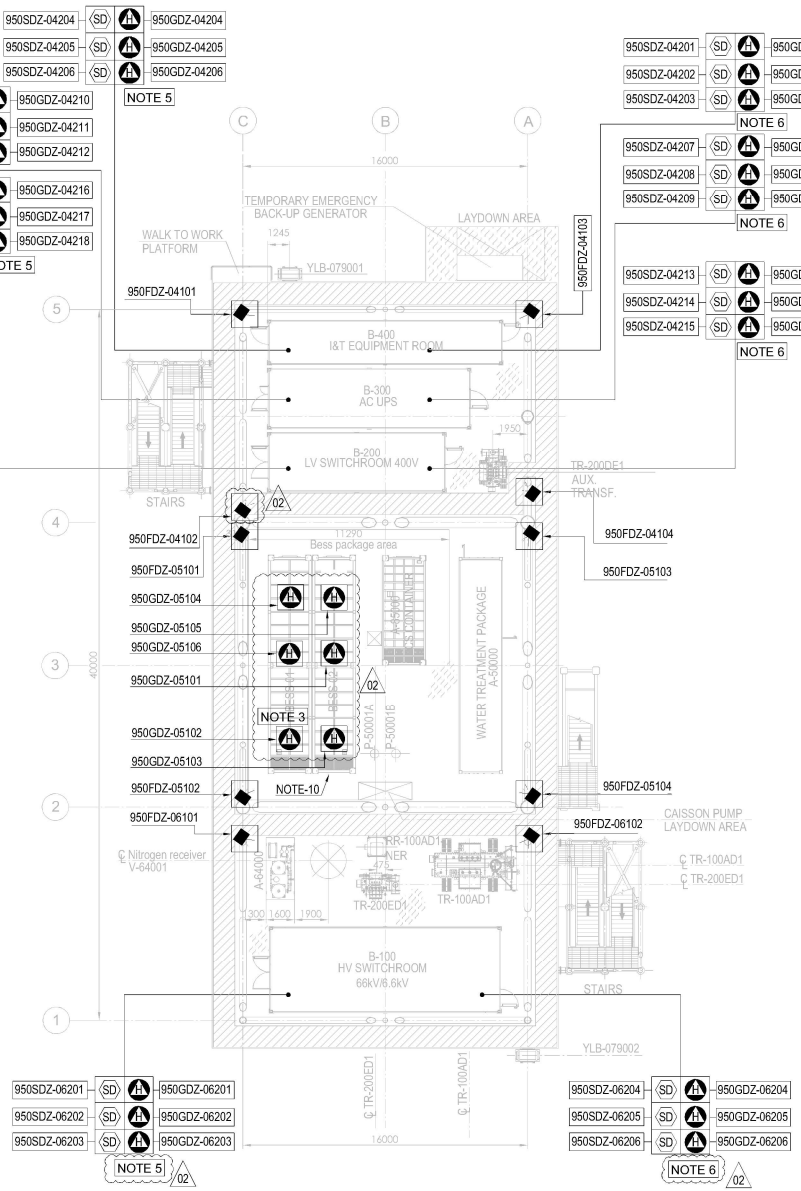
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N7722/24 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-05	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T16:31:13.367Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-05T15:08:34.384Z	



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

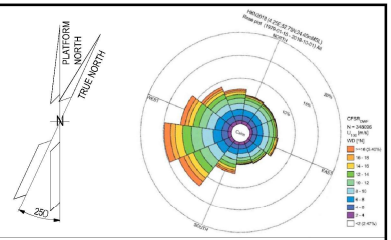


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION

FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

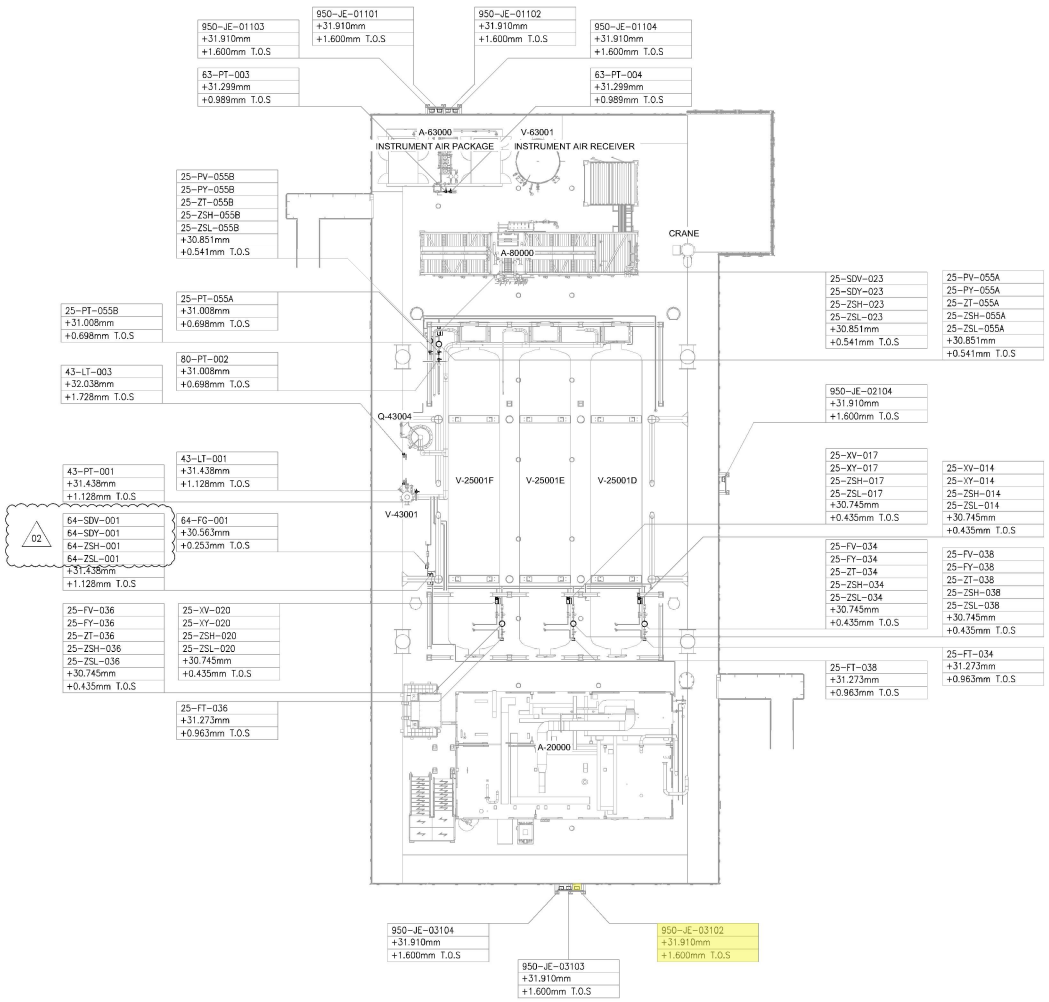
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DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

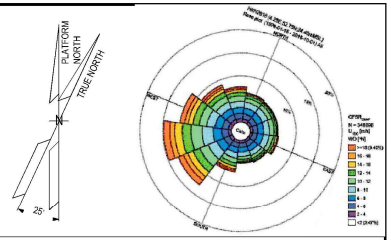
REV. 01



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

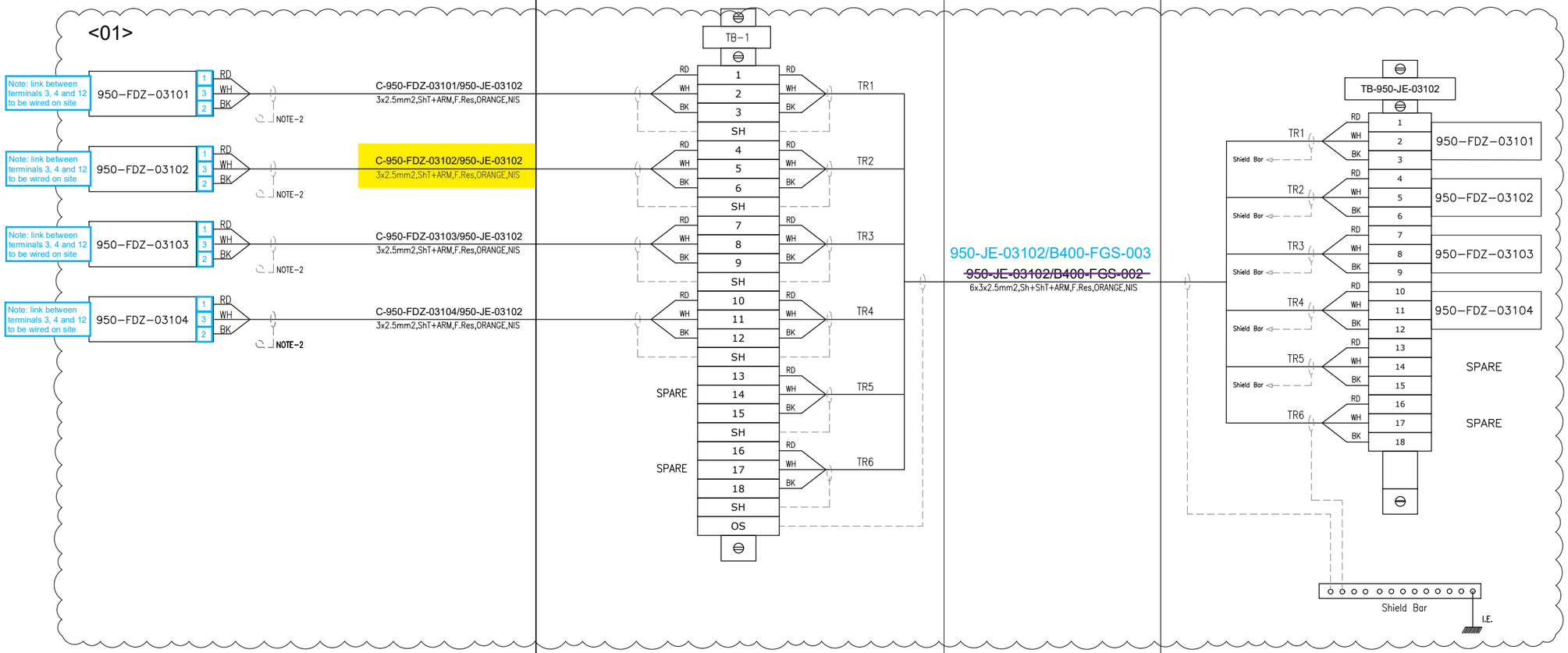
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081		SHEET 001 / REV. 02

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

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03102	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003



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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03102

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 037	REV. 01

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

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

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. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

6. 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).

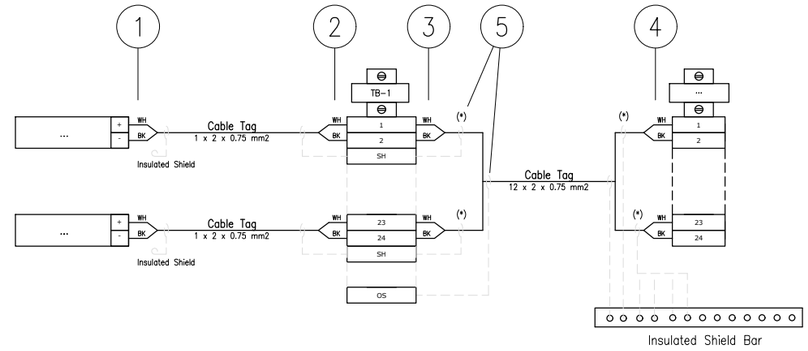
LEGENDS & SYMBOLS:

LEGEND:

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 <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

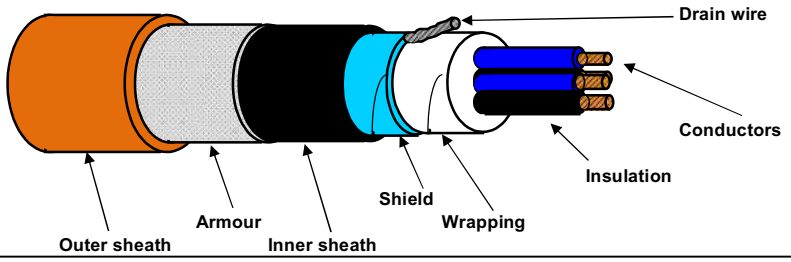
File Name : 123A90-DDL-IN-DG-40016_Rev.01

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-950-FDZ-03102/950-JE-03102	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-FDZ-03102	Flame Detector	Upper Deck		950-JE-03102	AI JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-20M

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of 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-950-FDZ-03103/950-JE-03102	: FLAME DETECTOR / MARSHALLING PCS	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10002420	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	1X3X2,5 mm2	Color	ORANGE
From	950-FDZ-03103	To	950-JE-03102		

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.	PL
9	Check cable labelling is in accordance with specification.	PL
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		0,3	Ω
	SCREEN		0,3	Ω
	EARTH		NA	Ω
	ARMr		0,3	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

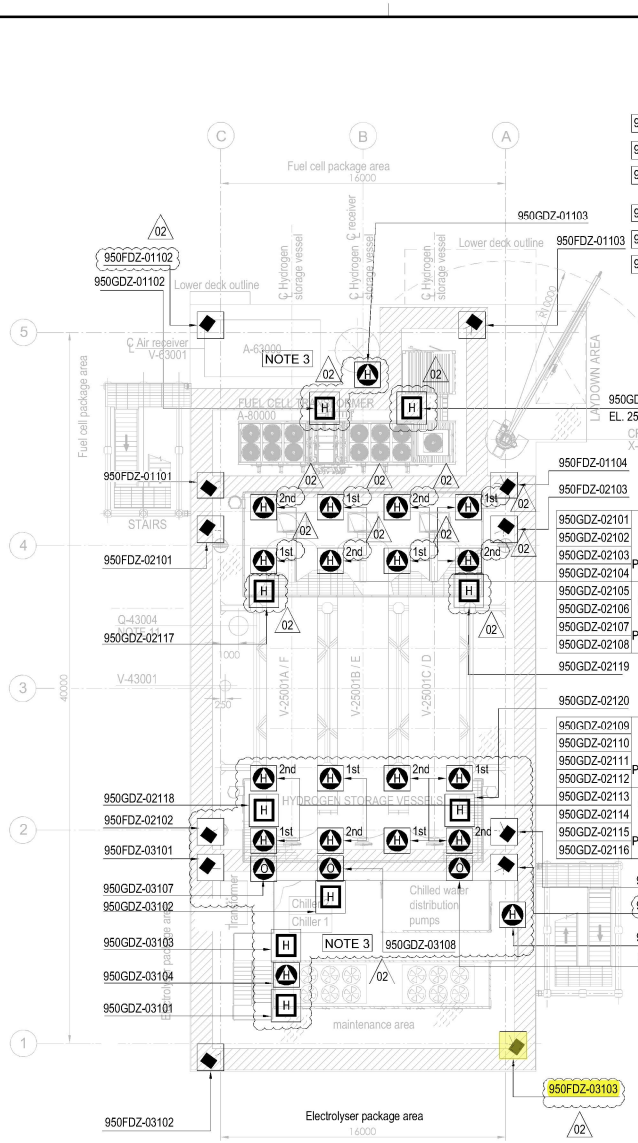
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

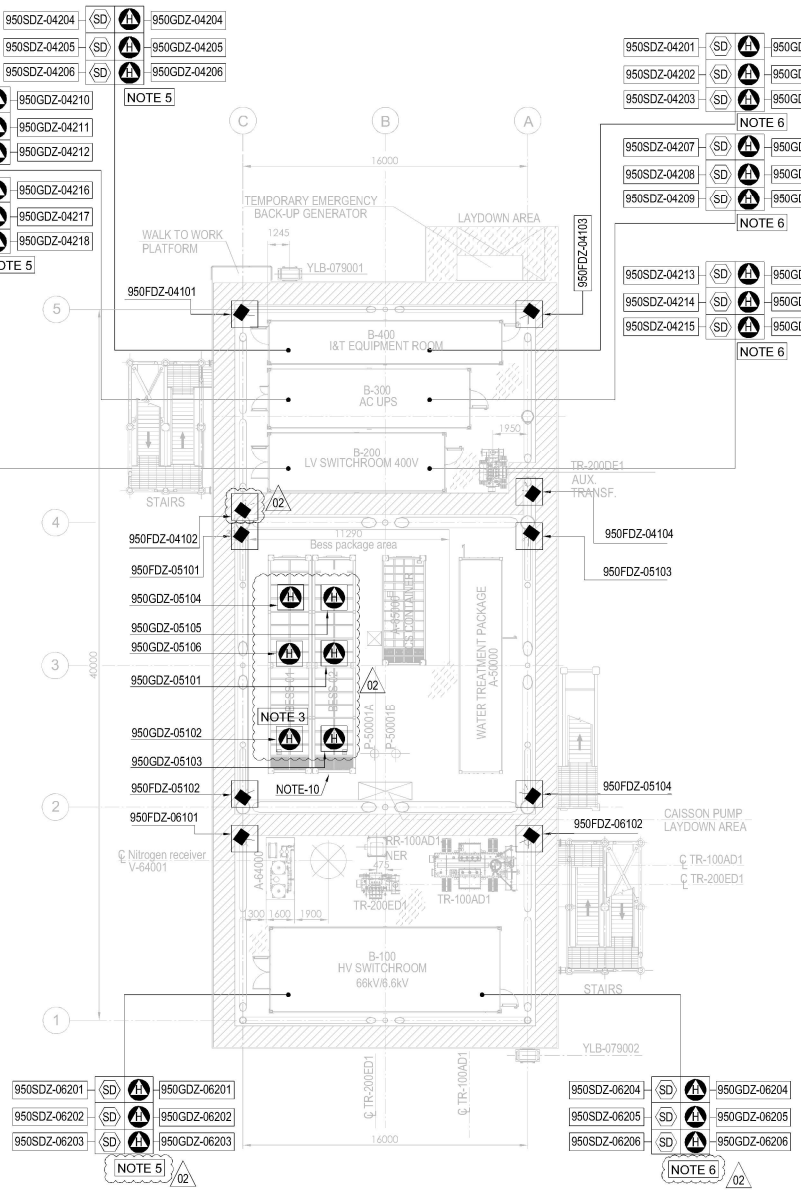
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N7722/24 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Andrea Andreani	
Date	2024-12-09	2024-12-11	
Signature	Digitaly signed by Francesco Zucca 2024-12-09T10:50:09.587Z	Digitaly signed by Andrea Andreani 2024-12-11T16:31:50.528Z	



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

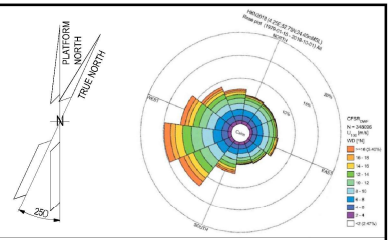


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION

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GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_A	22/10/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24

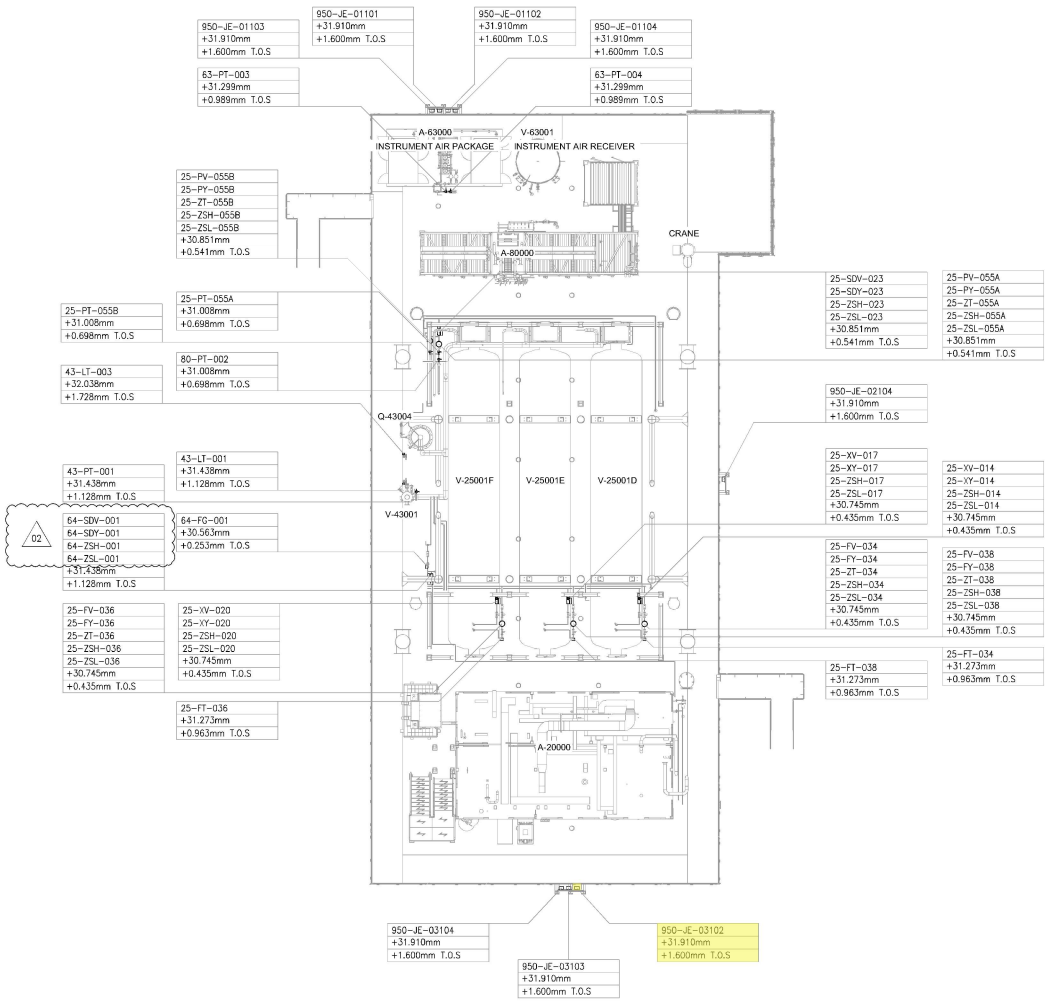
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DRAWING NO. 123A90-DDL-PP-DL-30027 REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

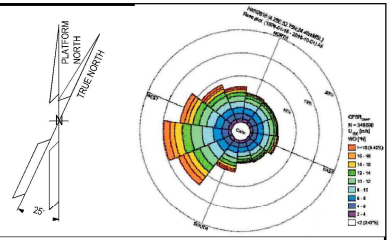
REV. 01



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

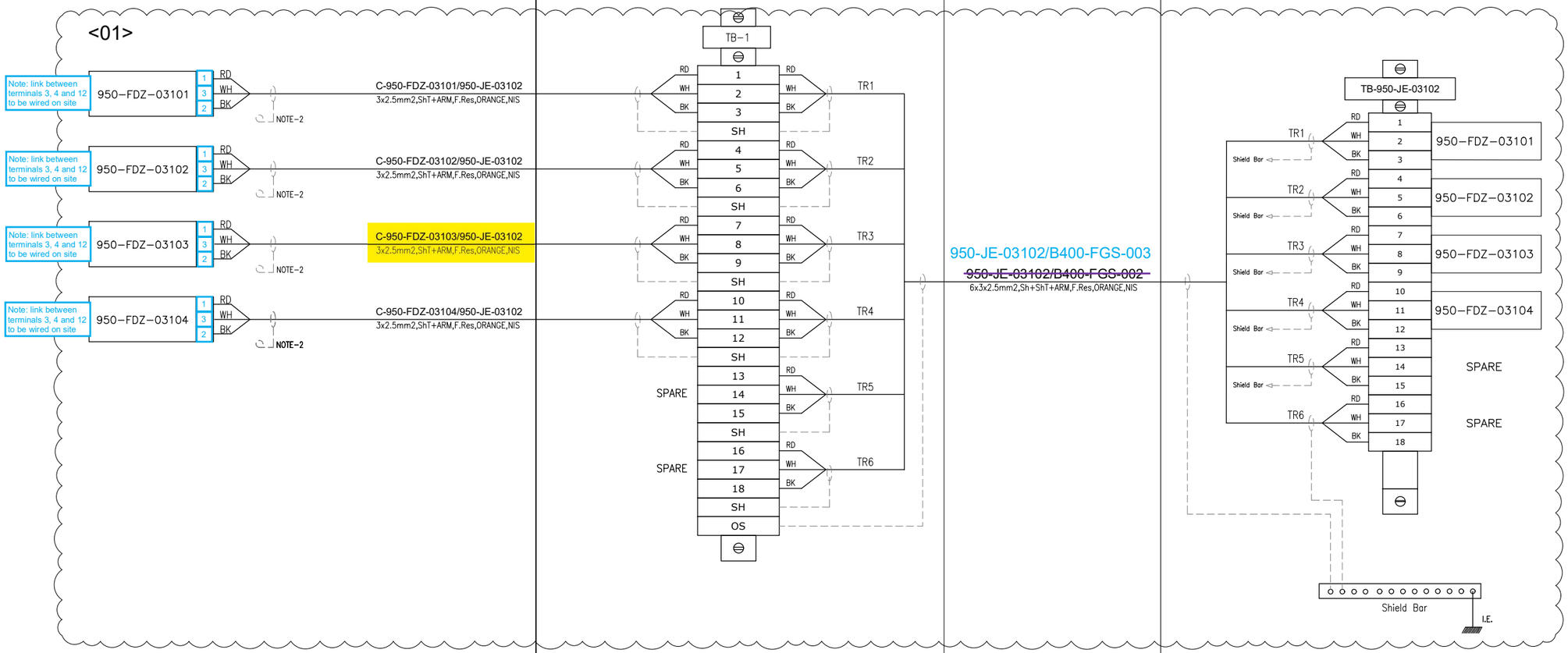
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081		SHEET 001 / REV. 02

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

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03102	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003



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

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

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03102

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 037	REV. 01

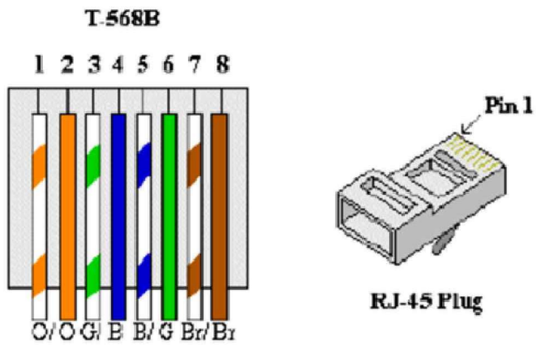
File Name : 123A90-DDL-IN-DG-40016_Rev.01

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:



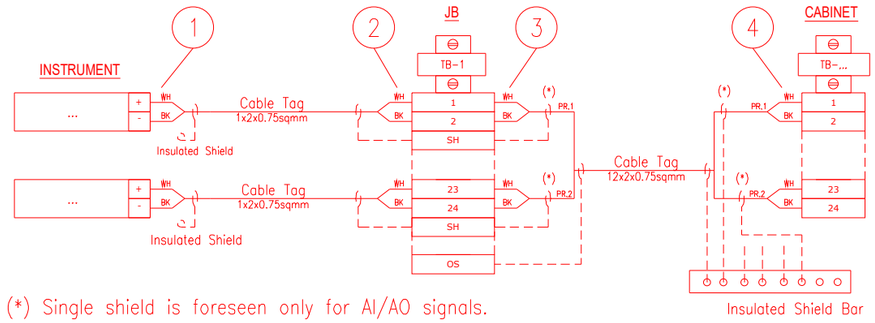
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

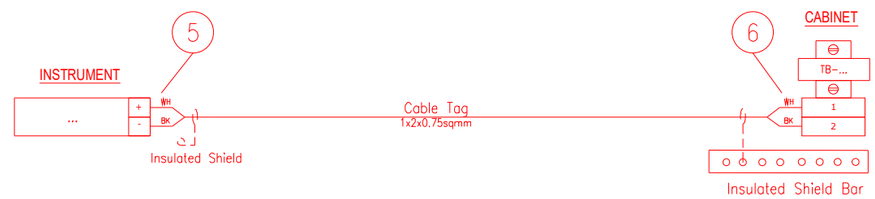
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY 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:

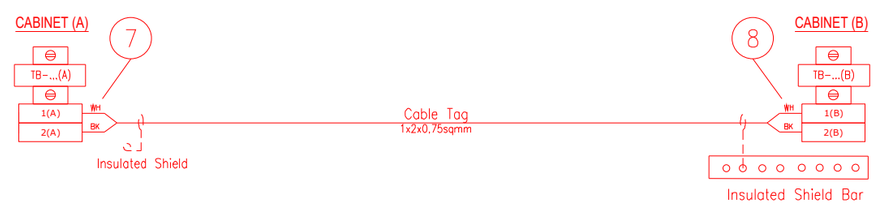
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



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_N	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

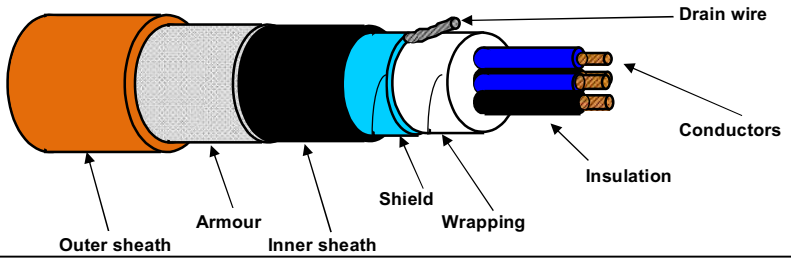
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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-950-FDZ-03103/950-JE-03102	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-FDZ-03103	Flame Detector	Upper Deck		950-JE-03102	Al JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu Cl.2/MGT/XLPE/OS/ILSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-20L

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-950-FDZ-03104/950-JE-03102	: FLAME DETECTOR / MARSHALLING PCS		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10002421	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	1X3X2,5 mm2	Color	ORANGE
From	950-FDZ-03104	To	950-JE-03102		

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.	PL
9	Check cable labelling is in accordance with specification.	PL
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		0.5	Ω
	SCREEN		0.6	Ω
	EARTH		NA	Ω
	ARMr		0.5	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

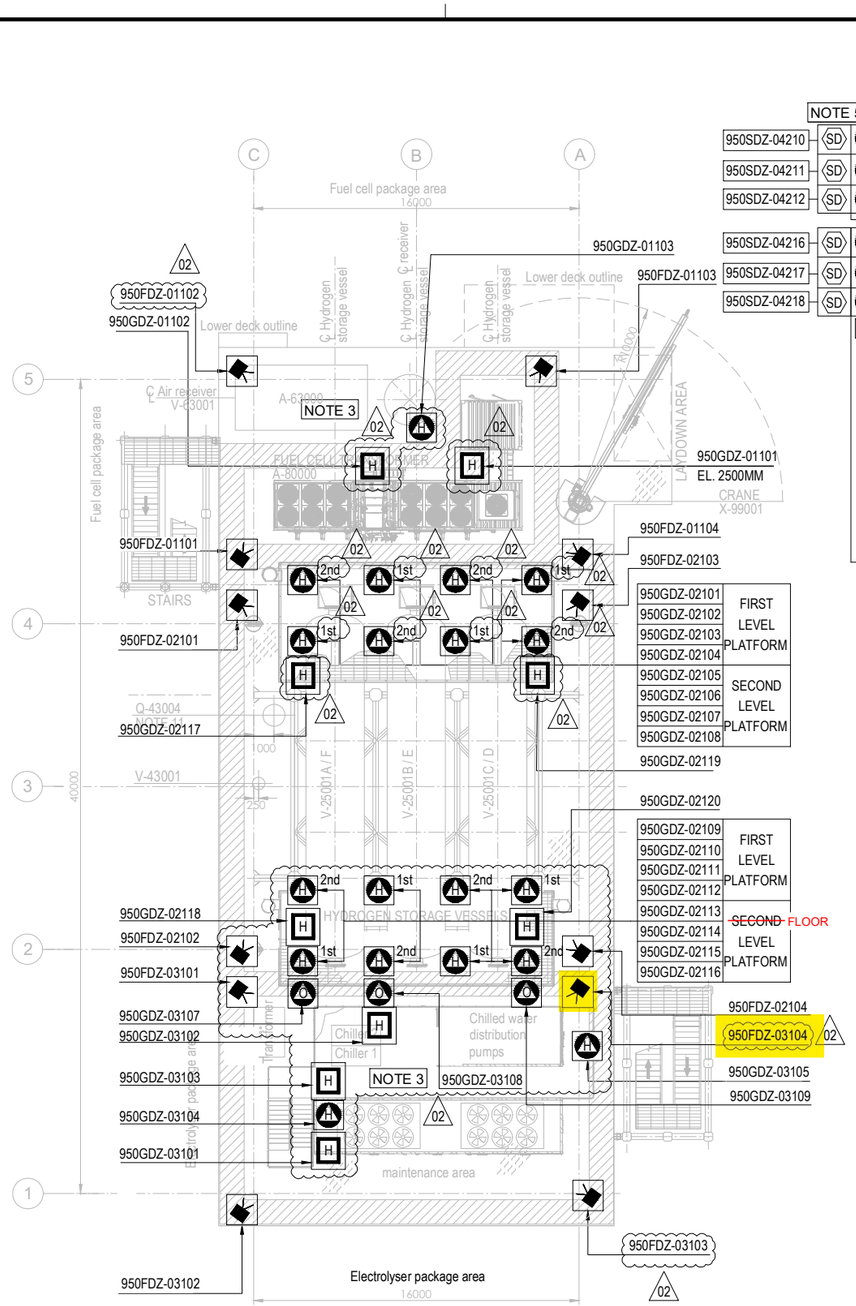
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000682

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Paolo Schintu	
Date	2024-12-02	2024-12-10	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T07:18:44.191Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-12-10T18:41:18.756Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



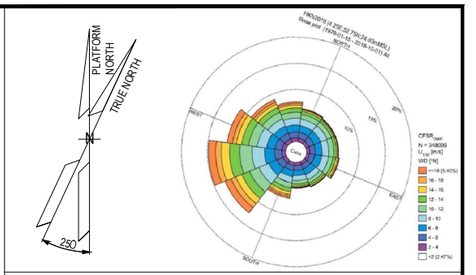
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_C	03/12/24	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

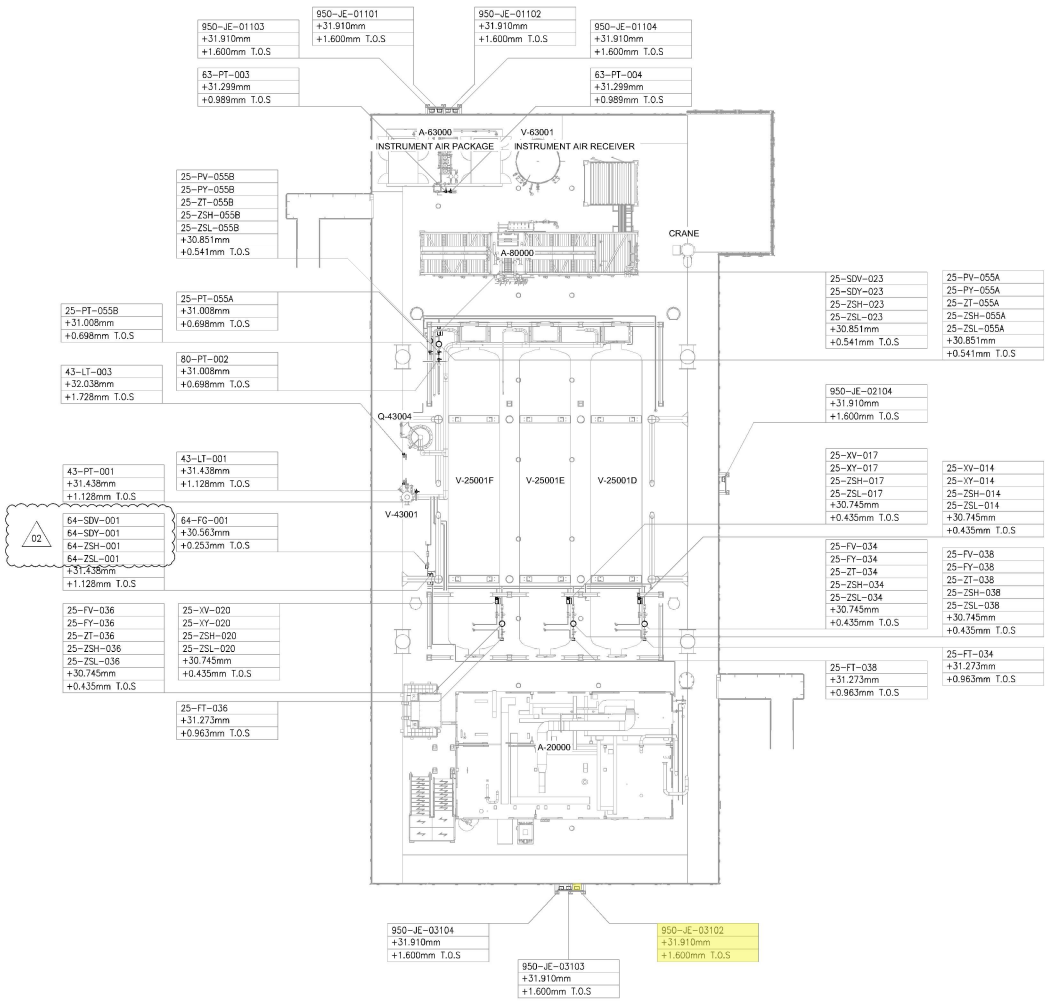
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

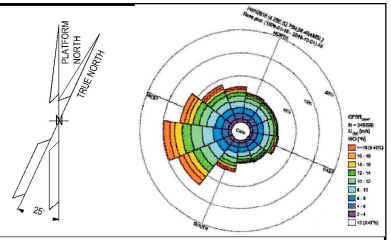
REV. 01



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-03102	No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003

<01>

Note: link between terminals 3, 4 and 12 to be wired on site

950-FDZ-03101 — RD, WH, BK — NOTE-2 — C-950-FDZ-03101/950-JE-03102 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03102 — RD, WH, BK — NOTE-2 — C-950-FDZ-03102/950-JE-03102 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03103 — RD, WH, BK — NOTE-2 — C-950-FDZ-03103/950-JE-03102 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

950-FDZ-03104 — RD, WH, BK — NOTE-2 — C-950-FDZ-03104/950-JE-03102 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-1

RD, WH, BK	1	RD, WH, BK — TR1
	2	
	3	
	SH	
RD, WH, BK	4	RD, WH, BK — TR2
	5	
	6	
	SH	
RD, WH, BK	7	RD, WH, BK — TR3
	8	
	9	
	SH	
RD, WH, BK	10	RD, WH, BK — TR4
	11	
	12	
	SH	
SPARE	13	RD, WH, BK — TR5
	14	
	15	
	SH	
SPARE	16	RD, WH, BK — TR6
	17	
	18	
	SH	
	OS	

950-JE-03102/B400-FGS-003

~~950-JE-03102/B400-FGS-002~~

6x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-03102

TR1 — RD, WH, BK	1	
Shield Bar	2	950-FDZ-03101
	3	
TR2 — RD, WH, BK	4	
Shield Bar	5	950-FDZ-03102
	6	
TR3 — RD, WH, BK	7	
Shield Bar	8	950-FDZ-03103
	9	
TR4 — RD, WH, BK	10	
Shield Bar	11	950-FDZ-03104
	12	
TR5 — RD, WH, BK	13	
Shield Bar	14	SPARE
	15	
TR6 — RD, WH, BK	16	
	17	SPARE
	18	

Shield Bar — I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_M	02/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

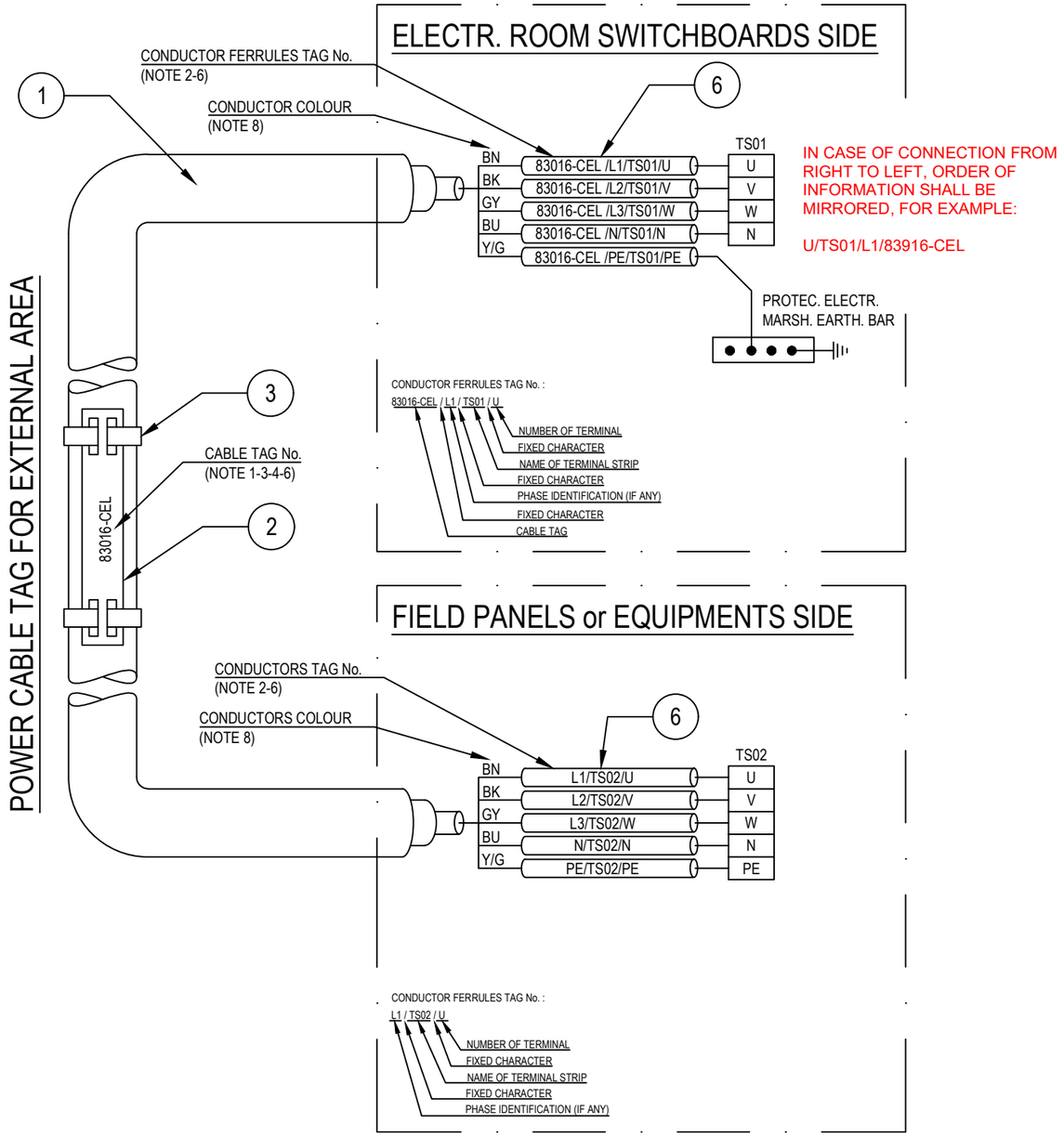
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–03102

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 037	REV. 01

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

C02



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 25 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

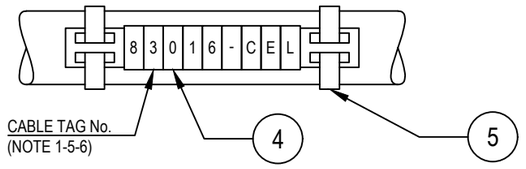
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH BAR
- EARTH BAR AND EARTH BOSS

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

POWER CABLE TAG FOR INTERNAL AREA



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20092**

REV.:	DATE:	SIGNATURE:
2_B	28/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	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-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR POWER CABLES

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20092	007	02

F.to UNI A3: 420mmx297mm

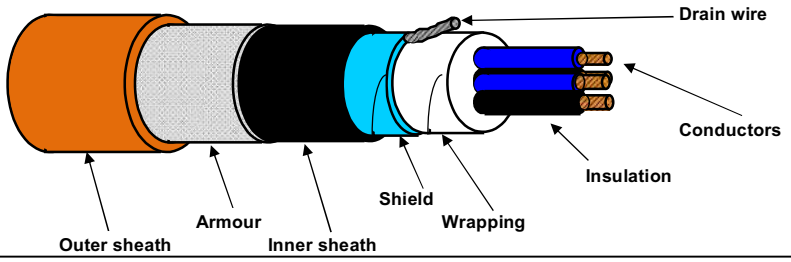
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

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-950-FDZ-03104/950-JE-03102	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-FDZ-03104	Flame Detector	Upper Deck		950-JE-03102	AI JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-20J / U-SEC-20K / U-SEC-20L

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-950-GDZ-03101/950-JE-03101 : GAS DETECTOR / MARSHALLING PCS				Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10002423		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	1X3X2,5 mm2	Color	ORANGE
From	950-GDZ-03101	To	950-JE-03101		

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.	PL
9	Check cable labelling is in accordance with specification.	PL
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		0,4	Ω
	SCREEN		0,4	Ω
	EARTH		NA	Ω
	ARMr		0,4	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

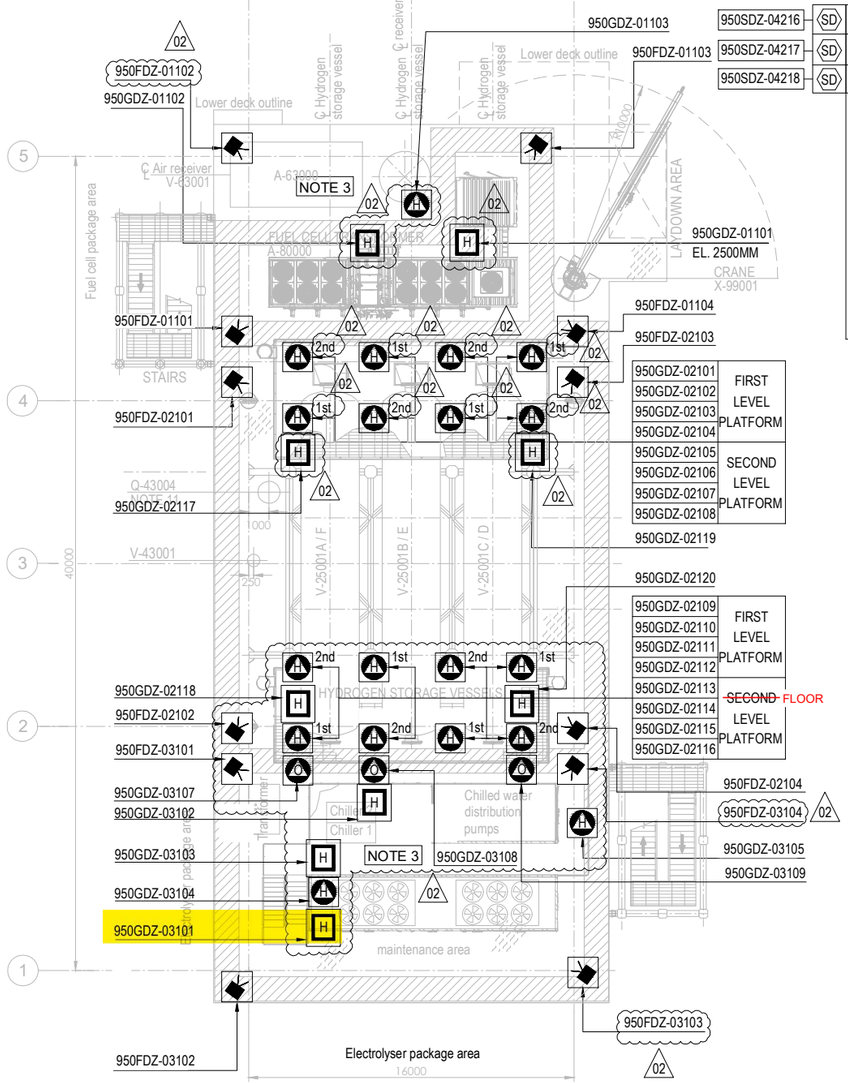
TYPE / SERIAL N°: MULTIMETRO SIN-STRU-017 S/N:H240103023 Calibration date: 11/10/2025

Comments Nota 5: refer to PL C30000682

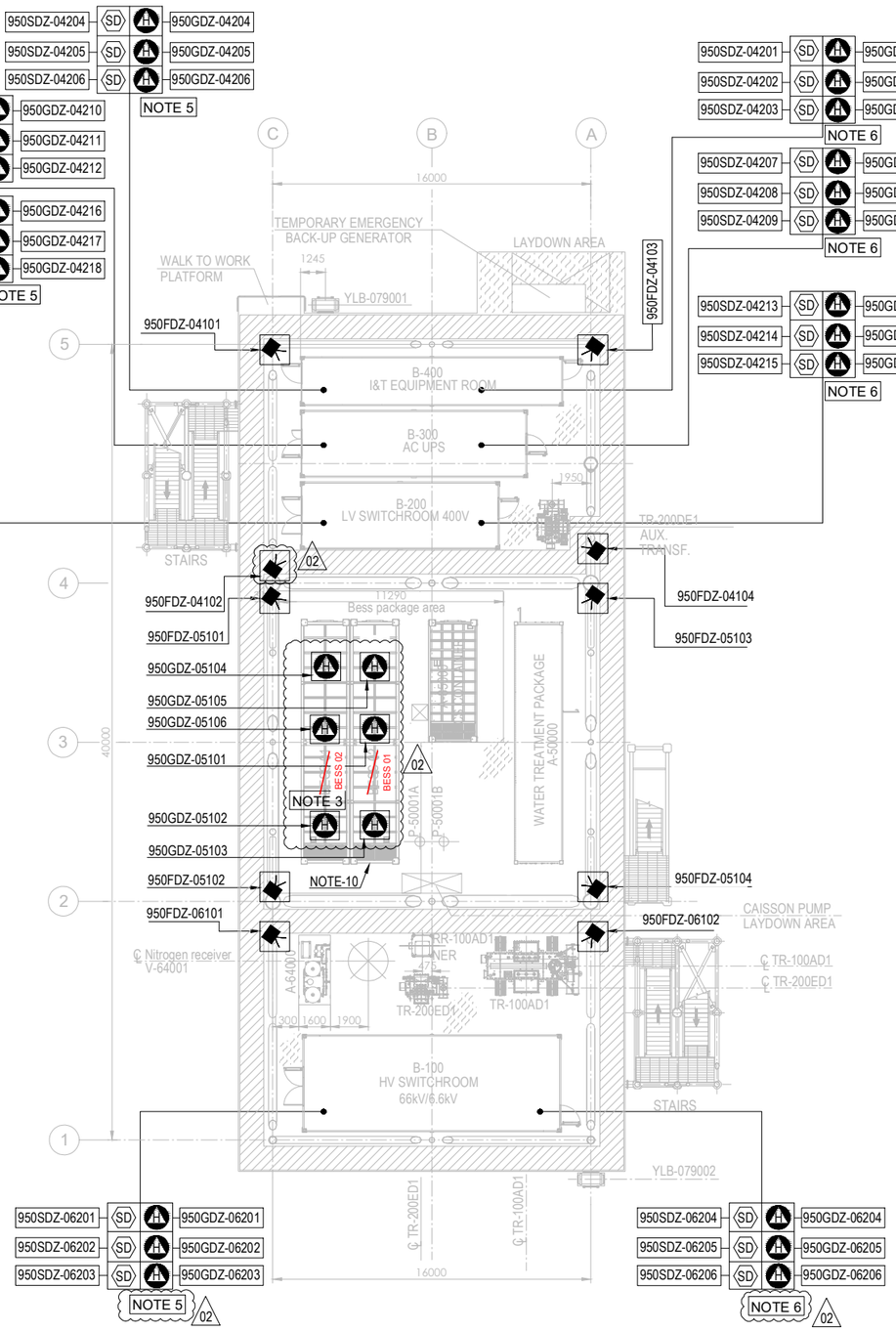
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-01-14	2025-01-14	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-14T08:54:17.789Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-14T17:17:33.090Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

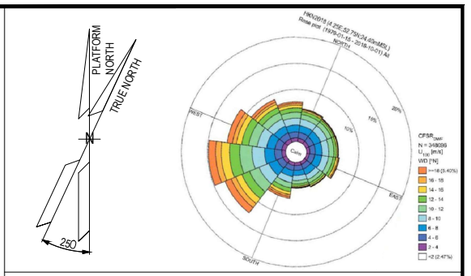


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_E	13/01/25	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

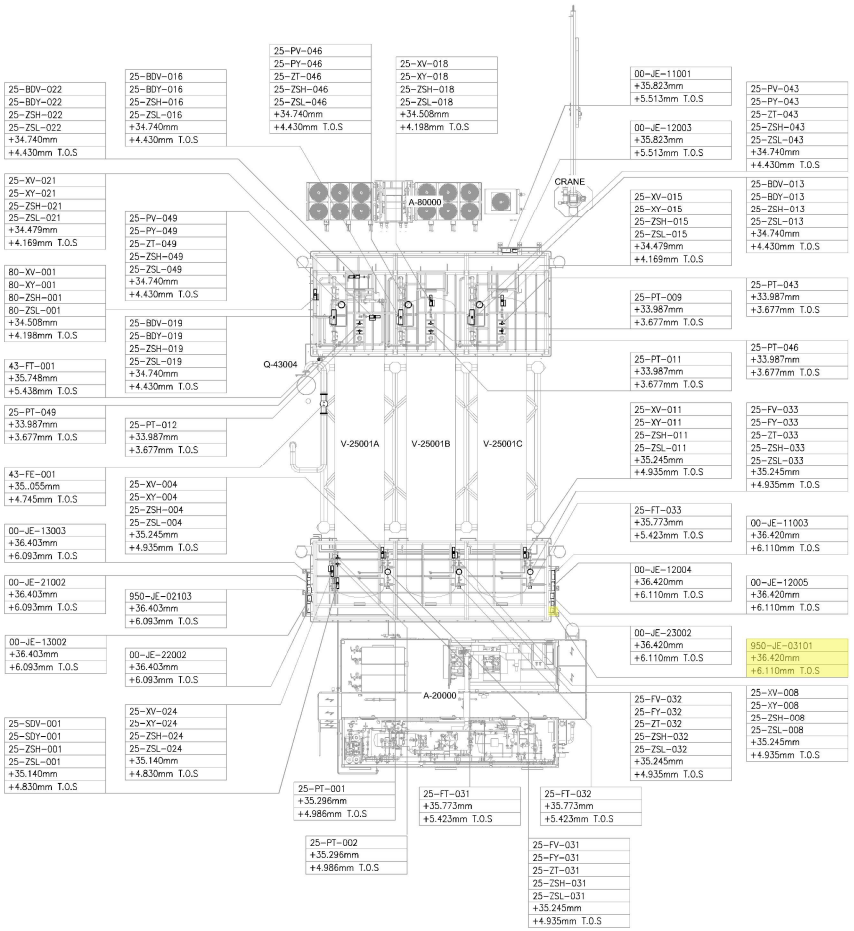
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

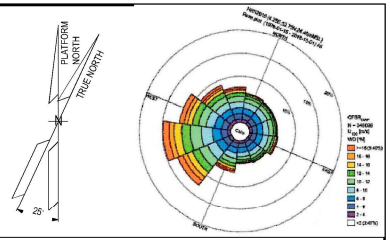
REV. 02



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS	CABLE	JUNCTION BOX 950-JE-03101	MULTICABLE No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003
950-GDZ-03101 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	TB-1: 1 RD, 2 WH, 3 BK, SH → TR1	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TB-950-JE-03101: 1 RD, 2 WH, 3 BK → TR1 (Shield Bar) → 950-GDZ-03101
950-GDZ-03102 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	4 RD, 5 WH, 6 BK, SH → TR2		4 RD, 5 WH, 6 BK → TR2 (Shield Bar) → 950-GDZ-03102
950-GDZ-03103 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	7 RD, 8 WH, 9 BK, SH → TR3		7 RD, 8 WH, 9 BK → TR3 (Shield Bar) → 950-GDZ-03103
950-GDZ-03104 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	10 RD, 11 WH, 12 BK, SH → TR4		10 RD, 11 WH, 12 BK → TR4 (Shield Bar) → 950-GDZ-03104
950-GDZ-03105 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	13 RD, 14 WH, 15 BK, SH → TR5		13 RD, 14 WH, 15 BK → TR5 (Shield Bar) → 950-GDZ-03105
950-GDZ-03107 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	16 RD, 17 WH, 18 BK, SH → TR6		16 RD, 17 WH, 18 BK → TR6 (Shield Bar) → 950-GDZ-03107
950-GDZ-03108 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	19 RD, 20 WH, 21 BK, SH → TR7		19 RD, 20 WH, 21 BK → TR7 (Shield Bar) → 950-GDZ-03108
950-GDZ-03109 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	22 RD, 23 WH, 24 BK, SH → TR8		22 RD, 23 WH, 24 BK → TR8 (Shield Bar) → 950-GDZ-03109
		SPARE: 25 RD, 26 WH, 27 BK, SH → TR9		25 RD, 26 WH, 27 BK → TR9 (Shield Bar) → SPARE
		SPARE: 28 RD, 29 WH, 30 BK, SH → TR10		28 RD, 29 WH, 30 BK → TR10 (Shield Bar) → SPARE
		SPARE: 31 RD, 32 WH, 33 BK, SH → TR11		31 RD, 32 WH, 33 BK → TR11 (Shield Bar) → SPARE
		SPARE: 34 RD, 35 WH, 36 BK, SH → TR12		34 RD, 35 WH, 36 BK → TR12 (Shield Bar) → SPARE
		OS		I.E. (Shield Bar)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	036	01

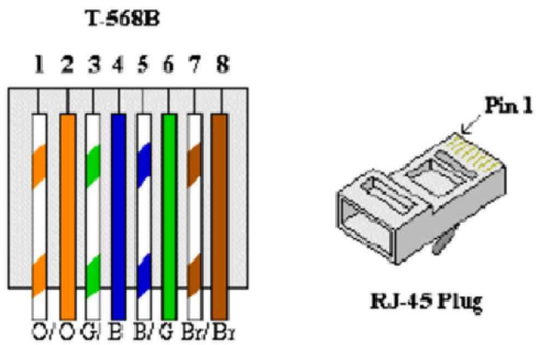
File Name : 123A90-DDL-IN-DG-40016_Rev.01

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:



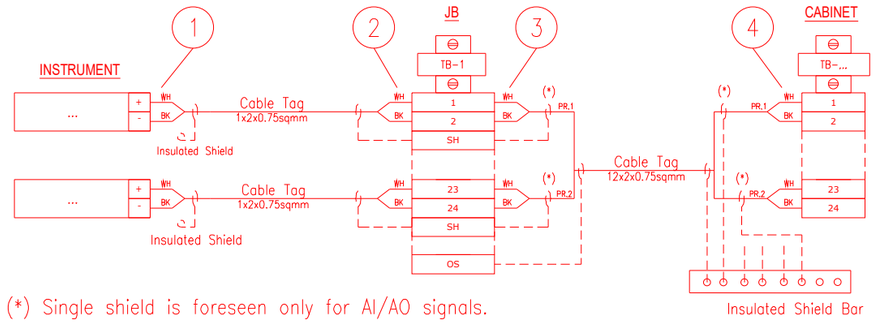
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

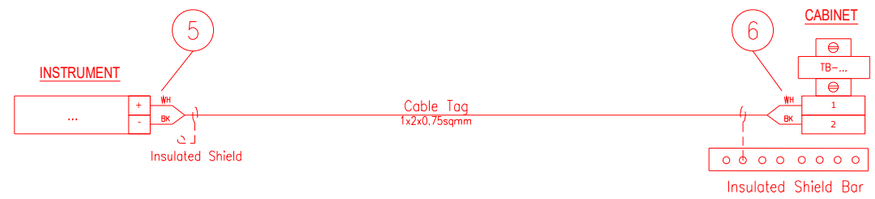
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY 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:

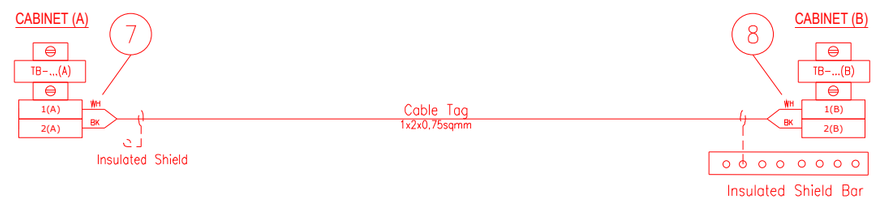
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



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_O	08/01/25	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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40015	003	01

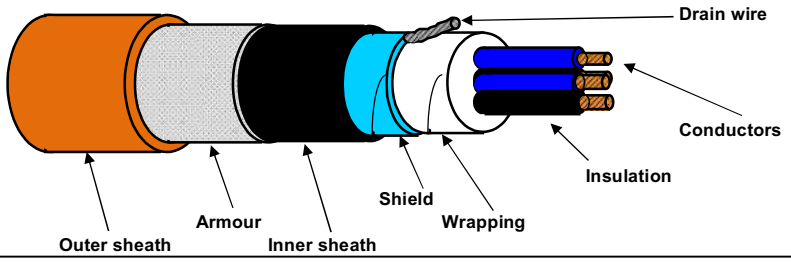
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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-950-GDZ-03101/950-JE-03101	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-GDZ-03101	Gas Detector	Upper Deck		950-JE-03101	AI JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/ILSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-14D / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of 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-950-GDZ-03102/950-JE-03101 : GAS DETECTOR / MARSHALLING PCS				Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10002424		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	1X3X2,5 mm2	Color	ORANGE
From	950-GDZ-03102		To	950-JE-03101	

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.	NA
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.	PL
9	Check cable labelling is in accordance with specification.	PL
10	Check that glands, shrouds and earthing are in accordance with specification.	NA
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	0,2	Ω
	SCREEN	0,2	Ω
	EARTH	NA	Ω
	ARMr	0,2	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

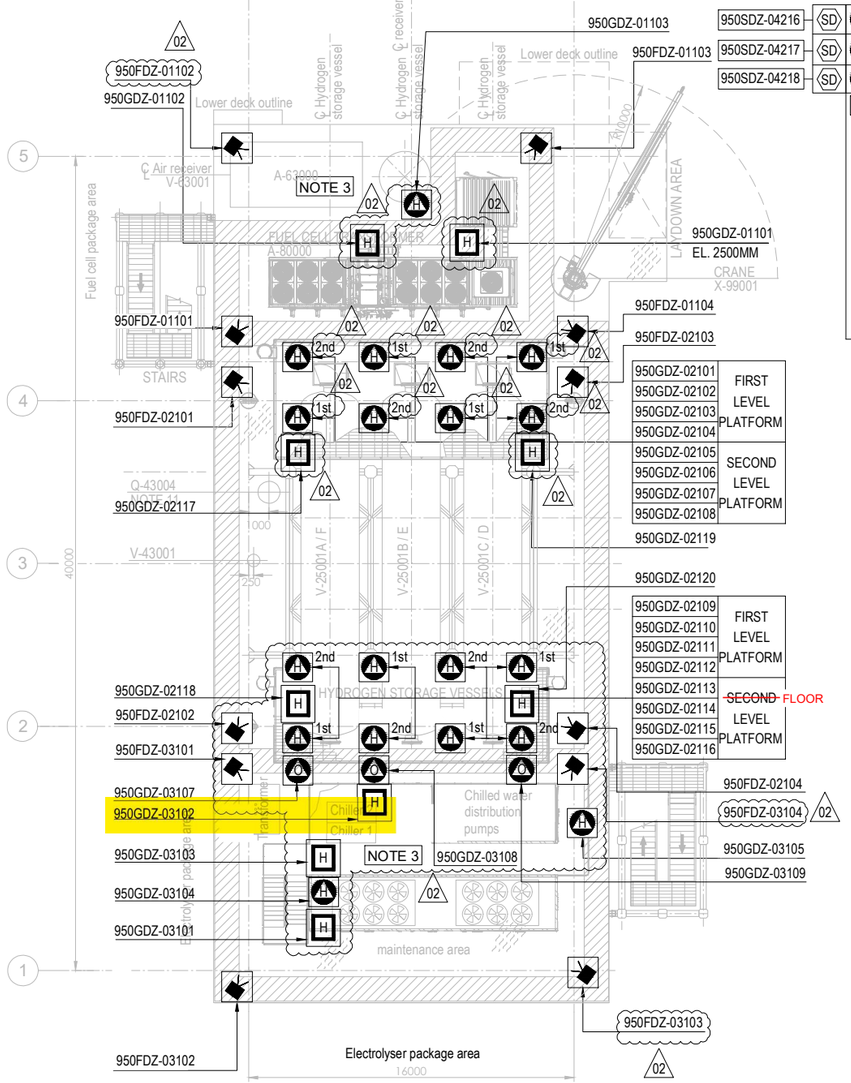
TYPE / SERIAL N°: MULTIMETRO SIN-STRU-017 S/N:H240103023 Calibration date: 11/10/2025

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	Giovanni Tangianu	
Date	2025-01-14	2025-01-14	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-14T08:54:27.682Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-14T17:35:33.800Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



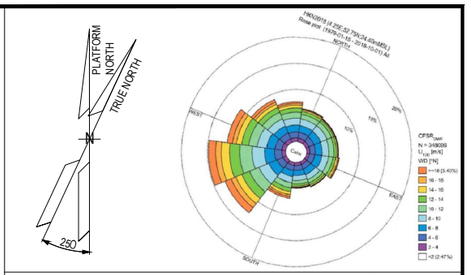
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_E	13/01/25	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

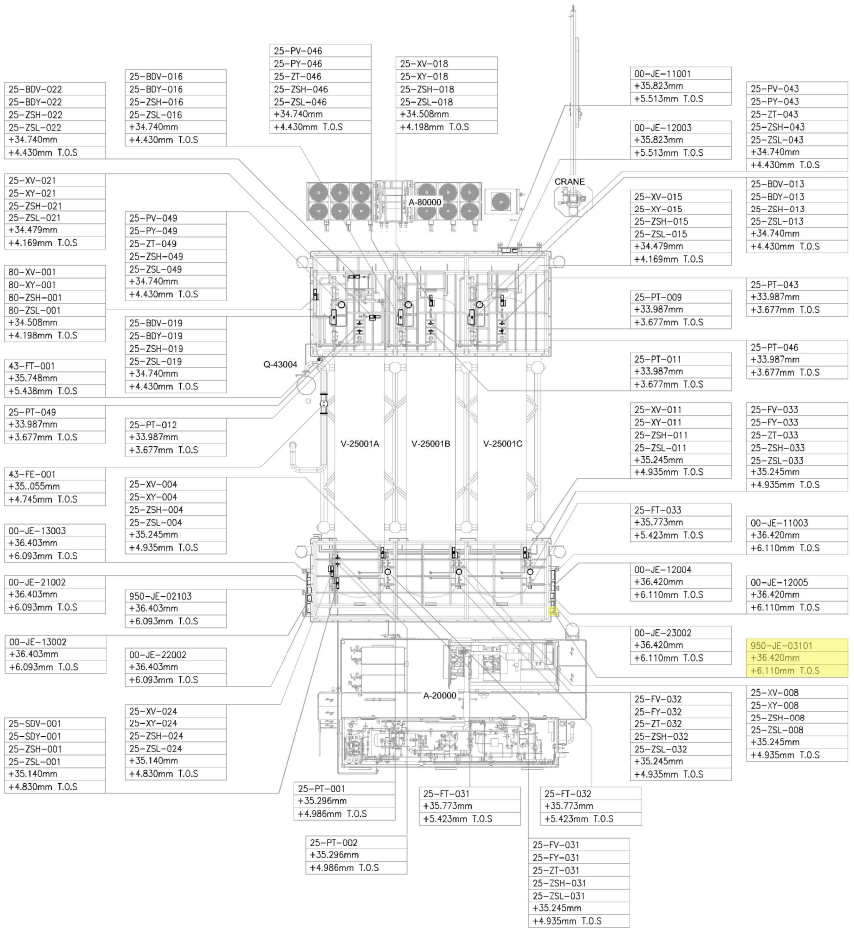
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

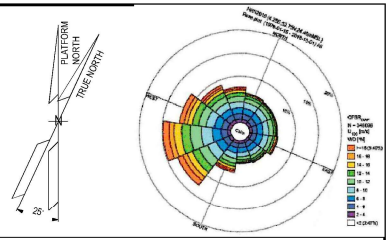
REV. 02



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS	CABLE	JUNCTION BOX TB-1	MULTICABLE	MARSHALLING CABINET TB-950-JE-03101
950-GDZ-03101 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 1, WH 2, BK 3, SH → TR1	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TR1 RD 1, WH 2, BK 3 → 950-GDZ-03101
950-GDZ-03102 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 4, WH 5, BK 6, SH → TR2		TR2 RD 4, WH 5, BK 6 → 950-GDZ-03102
950-GDZ-03103 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 7, WH 8, BK 9, SH → TR3		TR3 RD 7, WH 8, BK 9 → 950-GDZ-03103
950-GDZ-03104 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 10, WH 11, BK 12, SH → TR4		TR4 RD 10, WH 11, BK 12 → 950-GDZ-03104
950-GDZ-03105 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 13, WH 14, BK 15, SH → TR5		TR5 RD 13, WH 14, BK 15 → 950-GDZ-03105
950-GDZ-03107 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 16, WH 17, BK 18, SH → TR6		TR6 RD 16, WH 17, BK 18 → 950-GDZ-03107
950-GDZ-03108 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 19, WH 20, BK 21, SH → TR7		TR7 RD 19, WH 20, BK 21 → 950-GDZ-03108
950-GDZ-03109 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 22, WH 23, BK 24, SH → TR8		TR8 RD 22, WH 23, BK 24 → 950-GDZ-03109
		SPARE 25, 26, 27, SH → TR9		TR9 RD 25, WH 26, BK 27 → SPARE
		SPARE 28, 29, 30, SH → TR10		TR10 RD 28, WH 29, BK 30 → SPARE
		SPARE 31, 32, 33, SH → TR11		TR11 RD 31, WH 32, BK 33 → SPARE
		SPARE 34, 35, 36, SH → TR12		TR12 RD 34, WH 35, ~~BK~~ 36 → SPARE
		OS		Shield Bar, I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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 036	REV. 01

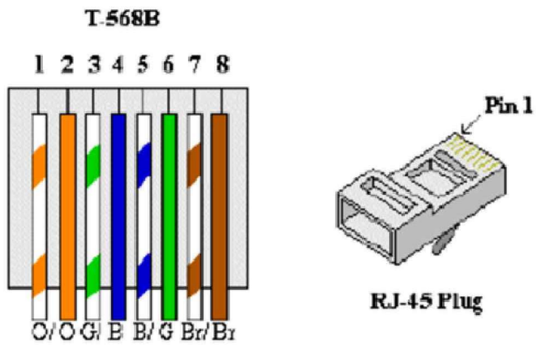
File Name : 123A90-DDL-IN-DG-40016_Rev.01

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:



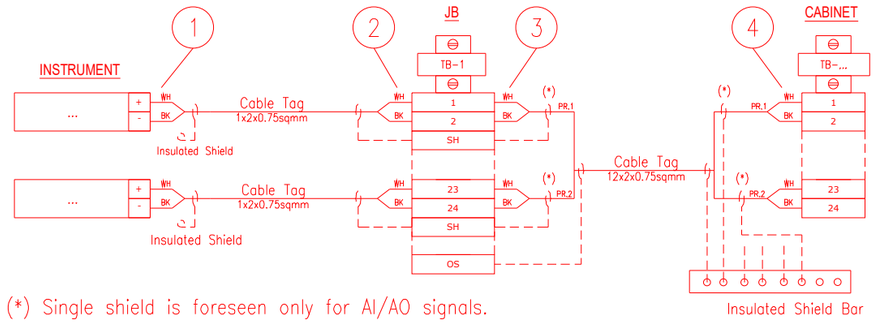
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

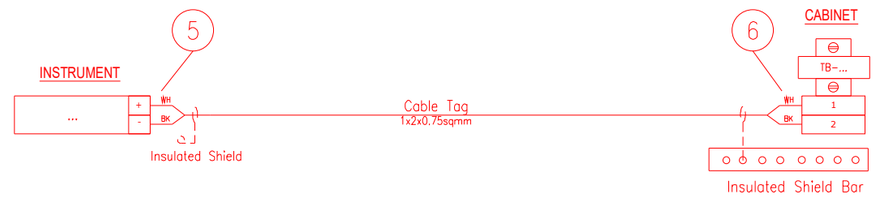
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY 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:

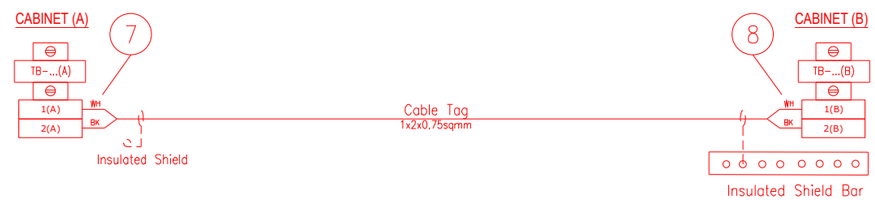
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



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_O	08/01/25	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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40015	003	01

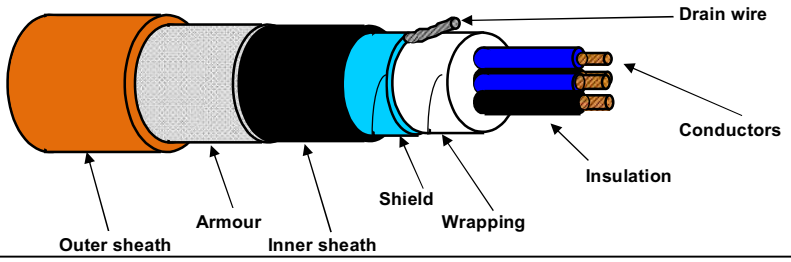
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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-950-GDZ-03102/950-JE-03101	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-GDZ-03102	Gas Detector	Upper Deck		950-JE-03101	AI JB to FGS	Upper Deck	Junction Box	SMICVI4-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-14D / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

ITEM	Tag	C-950-GDZ-03103/950-JE-03101 : GAS DETECTOR / MARSHALLING PCS				Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10002425		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	1X3X2,5 mm2	Color	ORANGE
From	950-GDZ-03103		To	950-JE-03101	

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.	PL
10	Check that glands, shrouds and earthing are in accordance with specification.	PL
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		0,3	Ω
	SCREEN		0,3	Ω
	EARTH		NA	Ω
	ARMr		0,3	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

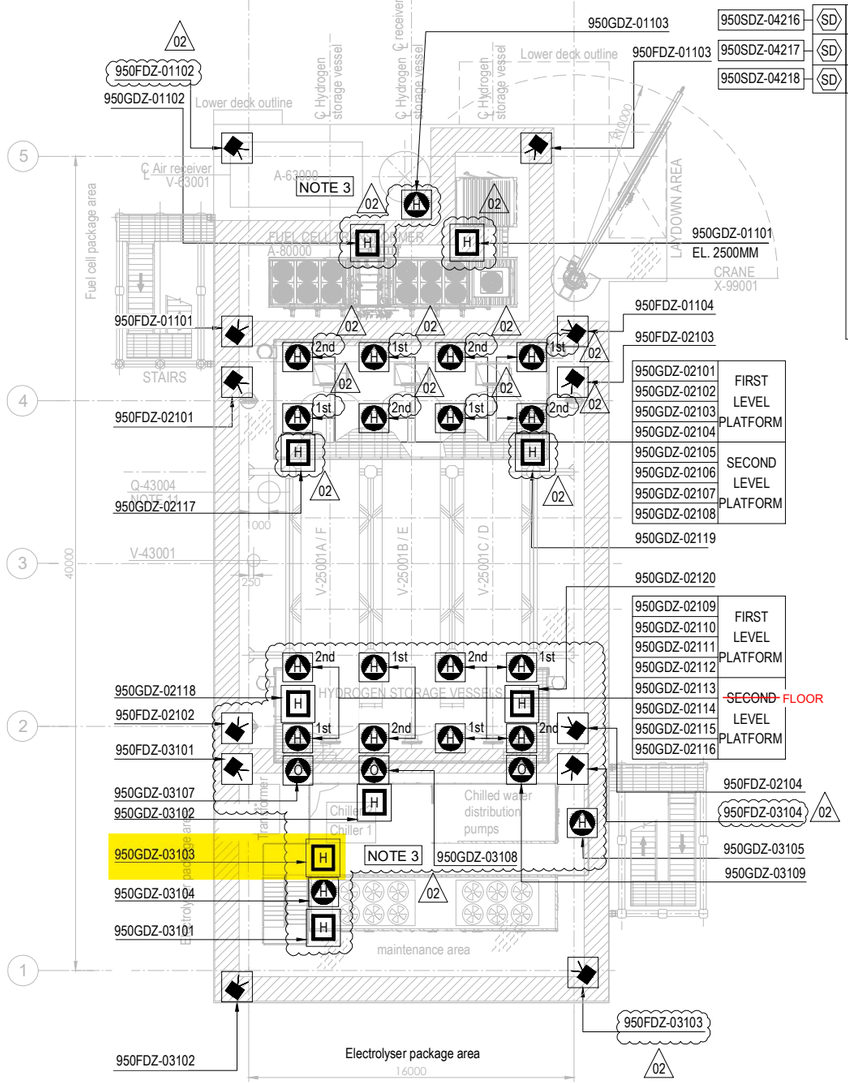
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

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	2025-01-13	2025-01-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-13T09:04:19.154Z	PROVERLIS Digitaly signed by Alessio Polo 2025-01-13T17:24:53.948Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



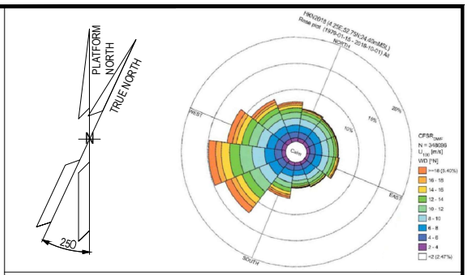
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-SAF-DL-30027

REV.:	DATE:	SIGNATURE:
2_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

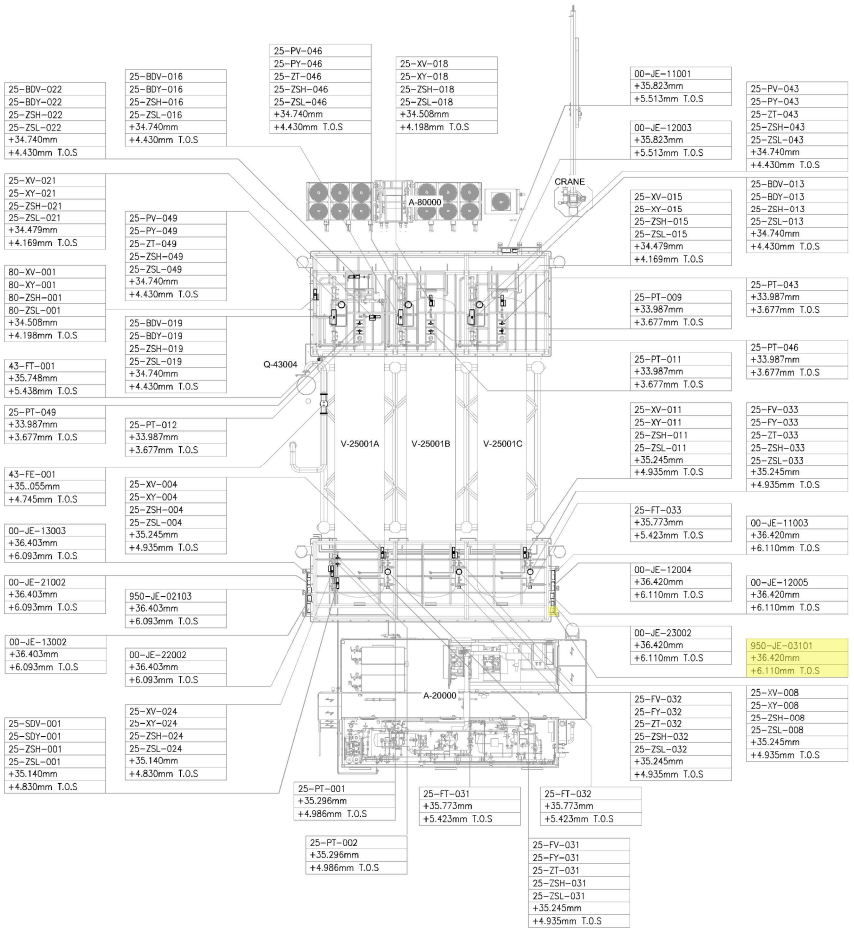
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

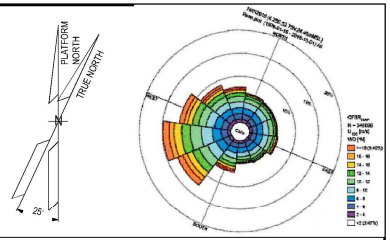
REV. 02



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS	CABLE	JUNCTION BOX TB-1	MULTICABLE	MARSHALLING CABINET TB-950-JE-03101
950-GDZ-03101 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 1, WH 2, BK 3, SH → TR1	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TR1 RD 1, WH 2, BK 3 → 950-GDZ-03101
950-GDZ-03102 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 4, WH 5, BK 6, SH → TR2		TR2 RD 4, WH 5, BK 6 → 950-GDZ-03102
950-GDZ-03103 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 7, WH 8, BK 9, SH → TR3		TR3 RD 7, WH 8, BK 9 → 950-GDZ-03103
950-GDZ-03104 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 10, WH 11, BK 12, SH → TR4		TR4 RD 10, WH 11, BK 12 → 950-GDZ-03104
950-GDZ-03105 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 13, WH 14, BK 15, SH → TR5		TR5 RD 13, WH 14, BK 15 → 950-GDZ-03105
950-GDZ-03107 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 16, WH 17, BK 18, SH → TR6		TR6 RD 16, WH 17, BK 18 → 950-GDZ-03107
950-GDZ-03108 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 19, WH 20, BK 21, SH → TR7		TR7 RD 19, WH 20, BK 21 → 950-GDZ-03108
950-GDZ-03109 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 22, WH 23, BK 24, SH → TR8		TR8 RD 22, WH 23, BK 24 → 950-GDZ-03109
		SPARE 25, 26, 27, SH → TR9		TR9 RD 25, WH 26, BK 27 → SPARE
		SPARE 28, 29, 30, SH → TR10		TR10 RD 28, WH 29, BK 30 → SPARE
		SPARE 31, 32, 33, SH → TR11		TR11 RD 31, WH 32, BK 33 → SPARE
		SPARE 34, 35, 36, SH → TR12		TR12 RD 34, WH 35, ~~BK~~ 36 → SPARE
		OS		Shield Bar, I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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 036	REV. 01

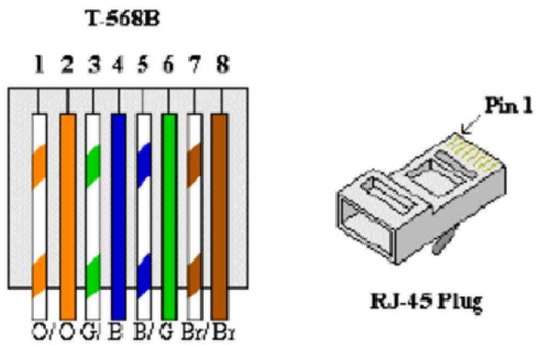
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DRAWING NO. 123A90-DDL-IN-DG-40015

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:



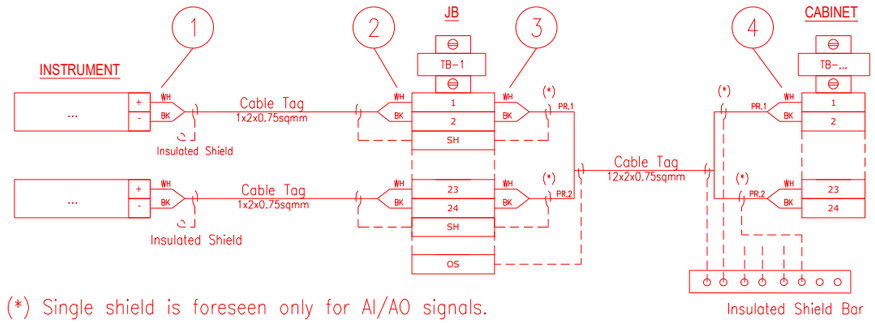
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

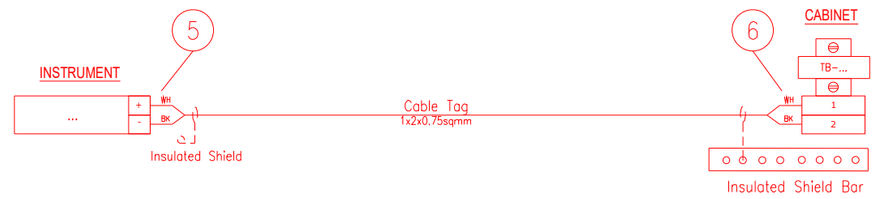
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY 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:

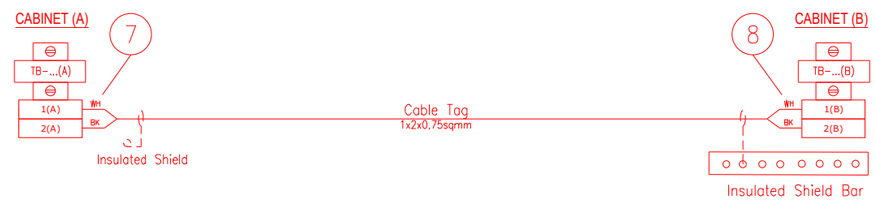
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



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_O	08/01/25	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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40015	003	01

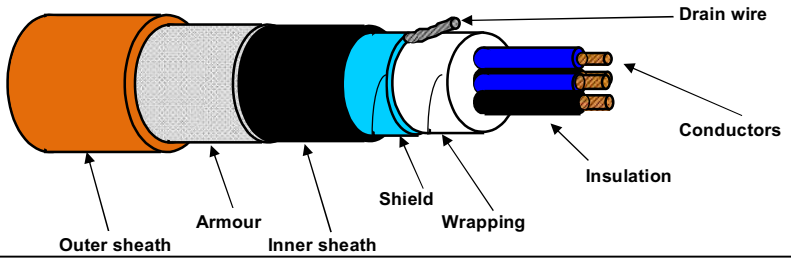
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Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-950-GDZ-03103/950-JE-03101	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-GDZ-03103	Gas Detector	Upper Deck		950-JE-03101	AI JB to FGS	Upper Deck	Junction Box	SMICVI4-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-14D / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of 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-950-GDZ-03104/950-JE-03101 : GAS DETECTOR / MARSHALLING PCS				Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12 : F&G Devices FZ-03 (Electrolyser Area)				Module	UD
TASK	code	C10002426		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	1X3X2,5 mm2	Color	ORANGE
From	950-GDZ-03104	To	950-JE-03101		

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.	PL
9	Check cable labelling is in accordance with specification.	PL
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.	OK
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		0,36	Ω
	SCREEN		0,36	Ω
	EARTH		NA	Ω
	ARMr		0,36	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

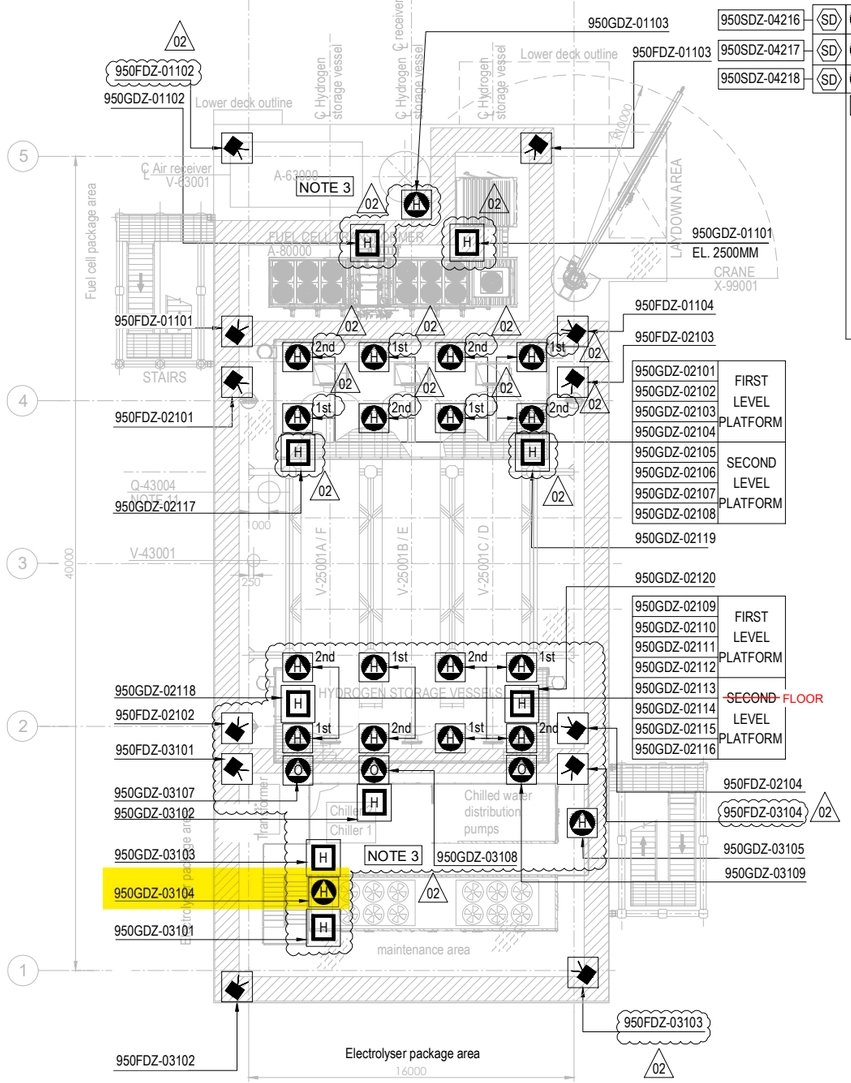
TYPE / SERIAL N°: MULTIMETRO SIN-STRU-017 S/N:H240103023 Calibration date: 11/10/2025

Comments Nota 5: refer to PL C30000682

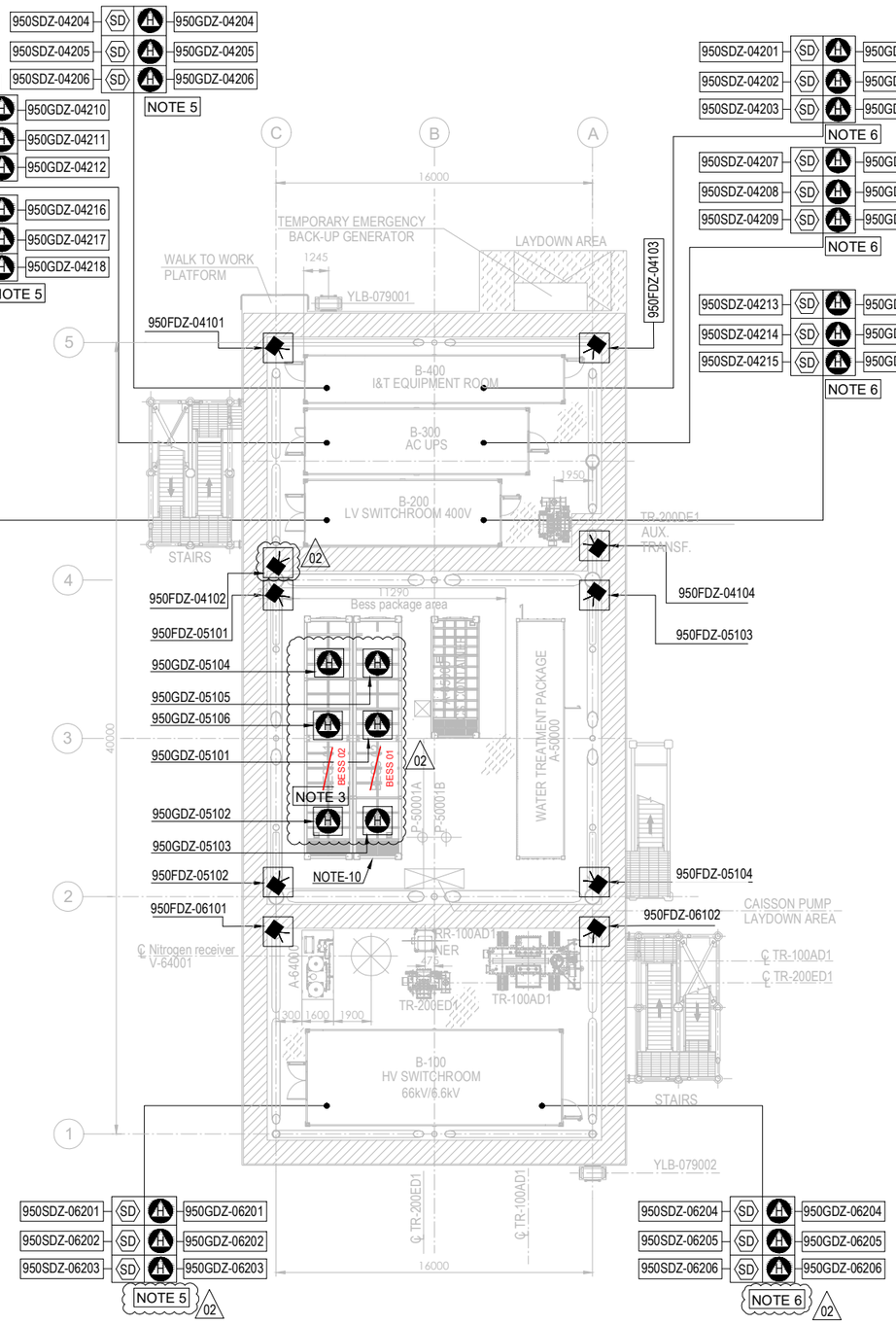
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-01-14	2025-01-14	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-14T08:54:42.835Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-14T17:54:02.096Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

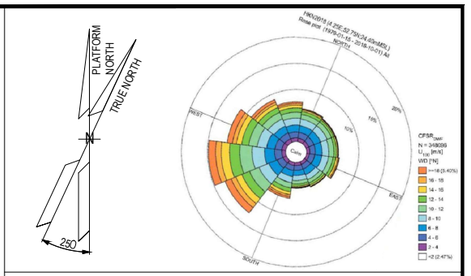


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
H	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_E	13/01/25	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

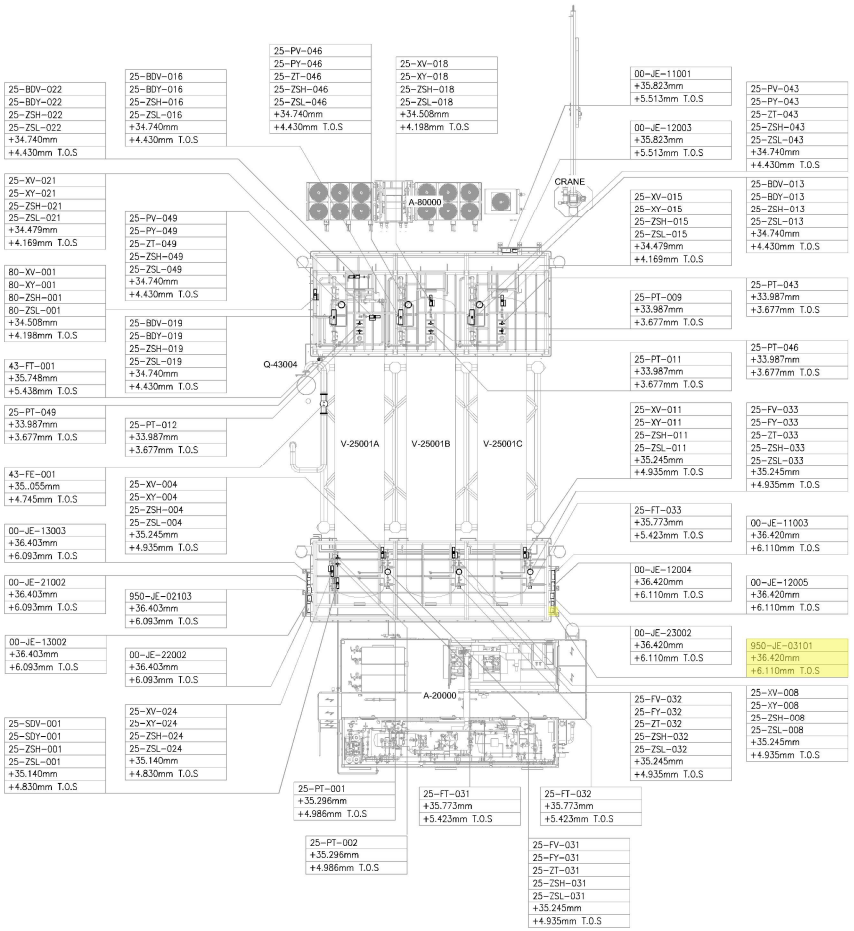
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

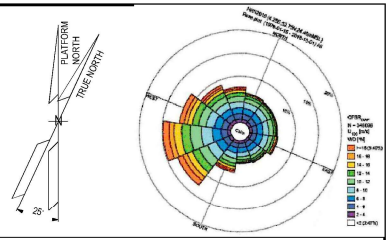
REV. 02



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS	CABLE	JUNCTION BOX TB-1	MULTICABLE	MARSHALLING CABINET TB-950-JE-03101
950-GDZ-03101 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 1, WH 2, BK 3, SH → TR1	950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	TR1 RD 1, WH 2, BK 3 → 950-GDZ-03101
950-GDZ-03102 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 4, WH 5, BK 6, SH → TR2		TR2 RD 4, WH 5, BK 6 → 950-GDZ-03102
950-GDZ-03103 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 7, WH 8, BK 9, SH → TR3		TR3 RD 7, WH 8, BK 9 → 950-GDZ-03103
950-GDZ-03104 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 10, WH 11, BK 12, SH → TR4		TR4 RD 10, WH 11, BK 12 → 950-GDZ-03104
950-GDZ-03105 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 13, WH 14, BK 15, SH → TR5		TR5 RD 13, WH 14, BK 15 → 950-GDZ-03105
950-GDZ-03107 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 16, WH 17, BK 18, SH → TR6		TR6 RD 16, WH 17, BK 18 → 950-GDZ-03107
950-GDZ-03108 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 19, WH 20, BK 21, SH → TR7		TR7 RD 19, WH 20, BK 21 → 950-GDZ-03108
950-GDZ-03109 (PWR+ RD, 4-20mA WH, PWR- BK) NOTE-2	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	RD 22, WH 23, BK 24, SH → TR8		TR8 RD 22, WH 23, BK 24 → 950-GDZ-03109
		SPARE 25, 26, 27, SH → TR9		TR9 RD 25, WH 26, BK 27 → SPARE
		SPARE 28, 29, 30, SH → TR10		TR10 RD 28, WH 29, BK 30 → SPARE
		SPARE 31, 32, 33, SH → TR11		TR11 RD 31, WH 32, BK 33 → SPARE
		SPARE 34, 35, 36, SH → TR12		TR12 RD 34, WH 35, ~~BK~~ 36 → SPARE
		OS		Shield Bar, I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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 036	REV. 01

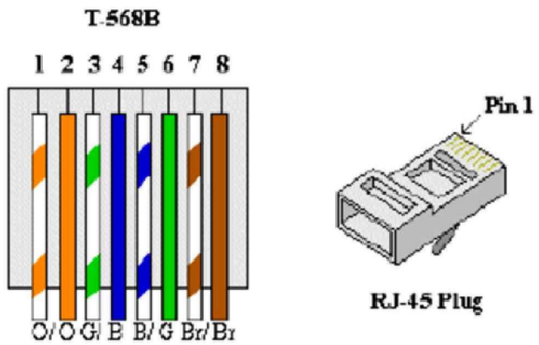
File Name : 123A90-DDL-IN-DG-40016_Rev.01

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:



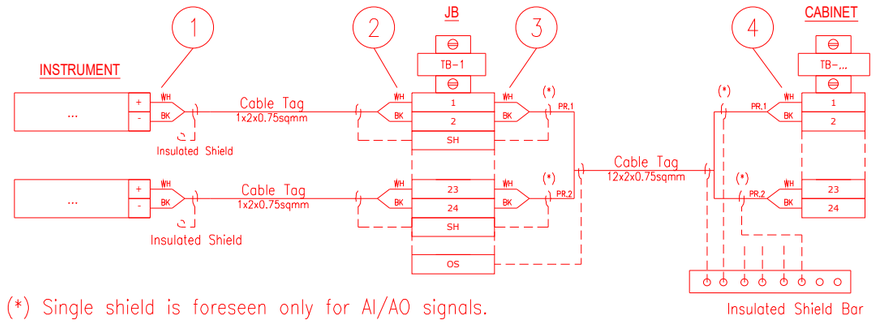
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

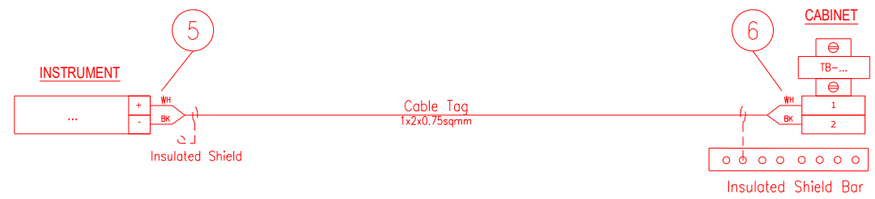
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY 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:

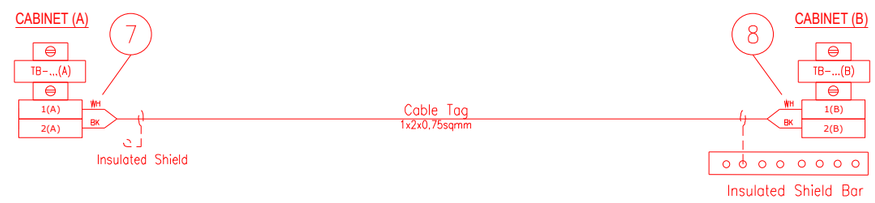
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



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_O	08/01/25	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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40015	003	01

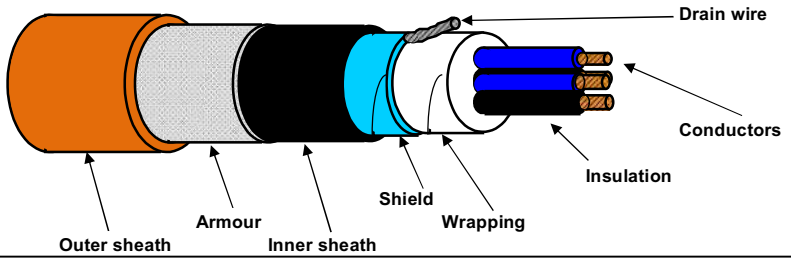
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Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-950-GDZ-03104/950-JE-03101	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-GDZ-03104	Gas Detector	Upper Deck		950-JE-03101	AI JB to FGS	Upper Deck	Junction Box	SMICVI4-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-14D / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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 is according to law. Rules with the use of the article 19 of the Regulation (UE) 2016/679, also by their updates, in order to allow the realization of the full range of 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-950-GDZ-03105/950-JE-03101	: GAS DETECTOR / MARSHALLING PCS	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10002427	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	1X3X2,5 mm2	Color	ORANGE
From	950-GDZ-03105	To	950-JE-03101		

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.	PL
9	Check cable labelling is in accordance with specification.	PL
10	Check that glands, shrouds and earthing are in accordance with specification.	PL
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	0,2	Ω
	SCREEN	0,2	Ω
	EARTH	NA	Ω
	ARMr	0,2	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

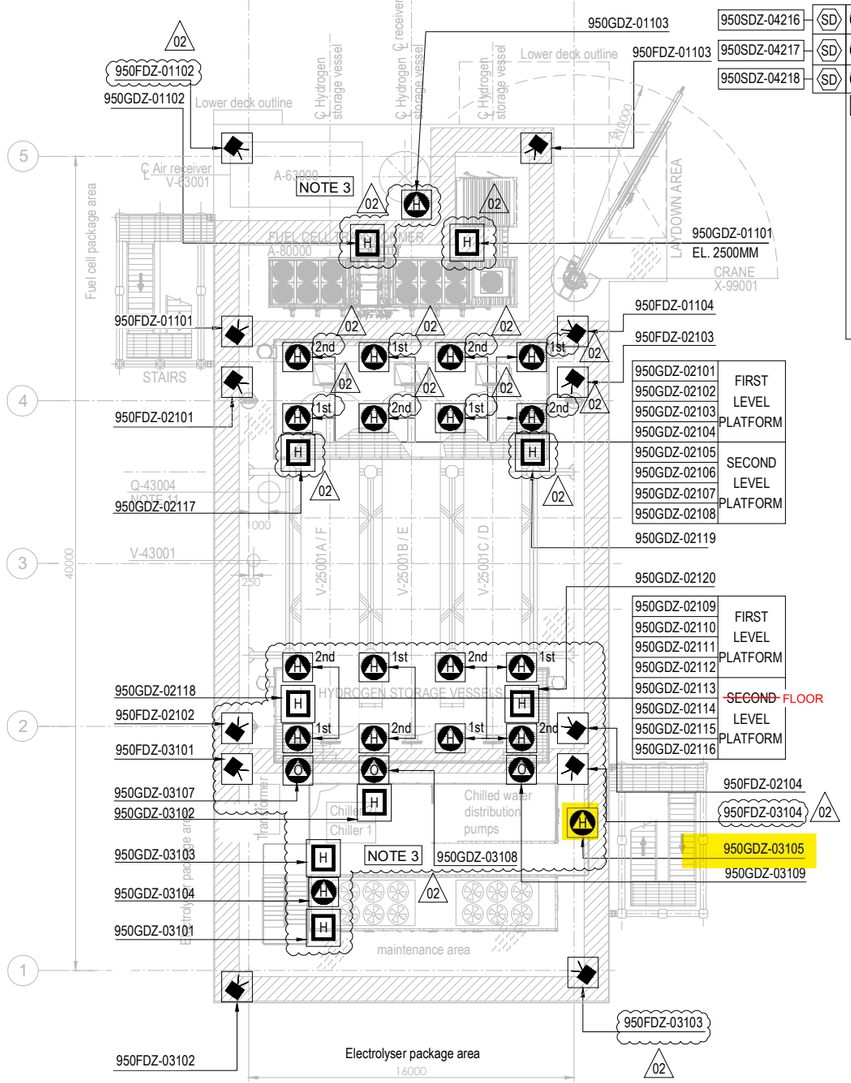
TYPE / SERIAL N°: MULTIMETRO SIN-STRU-017 S/N:H240103023 Calibration date: 11/10/2025

Comments Nota 5: refer to PL C30000682

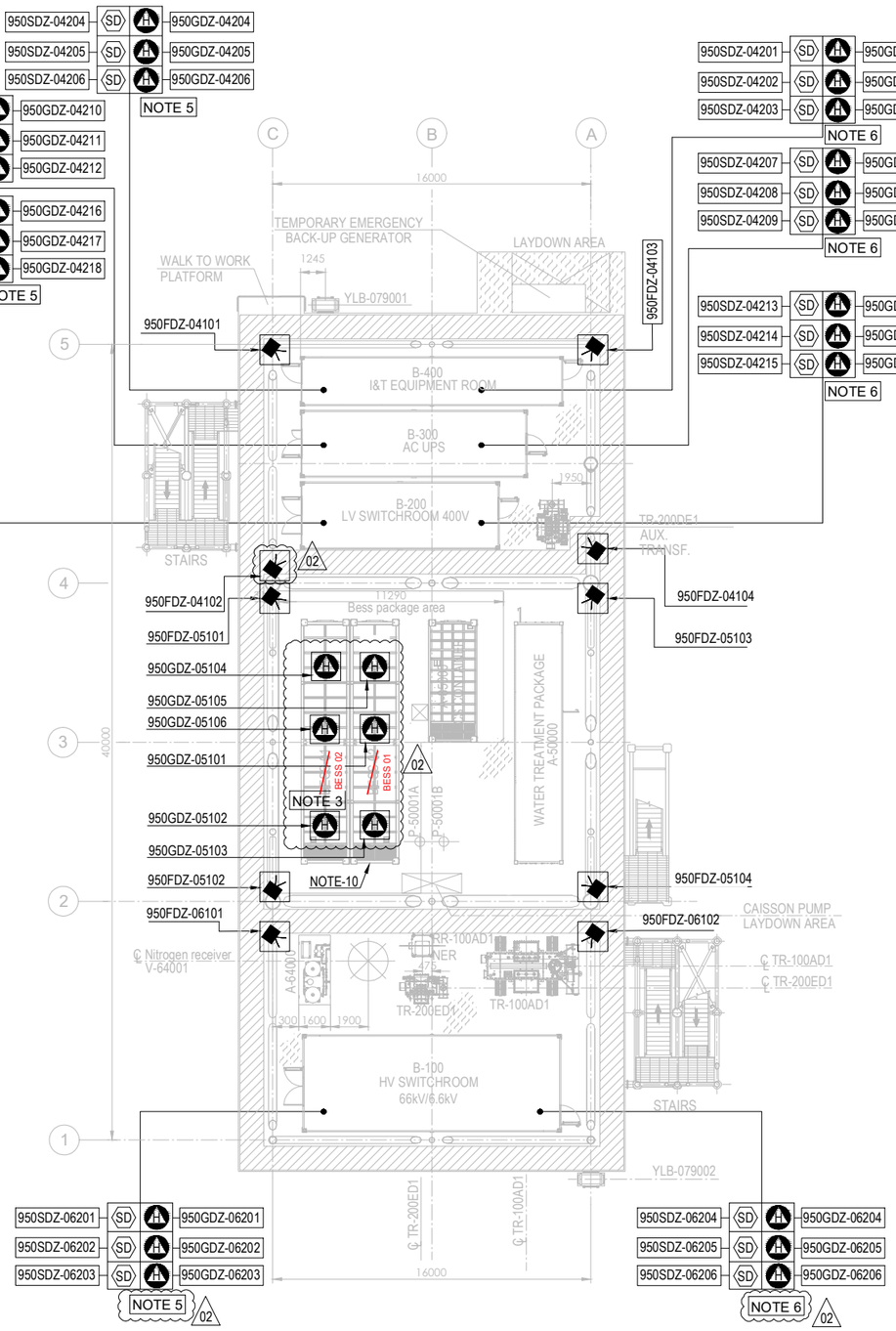
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-01-14	2025-01-14	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-14T08:54:57.419Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-01-14T18:01:57.864Z	

DRAWING NO. 123A90-DDL-PP-DL-30027

REV. 02



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

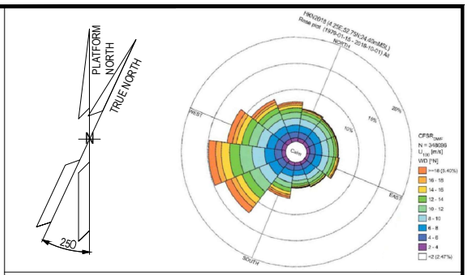


PLAN ON LOWER DECK
EL+23.310 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION	TAG NUMBER	DESCRIPTION
A-20000	ELECTROLYSER	TR-200DE1	TRANSFORMER AUX. 6.6kV/0.4kV
A-63000	INSTRUMENT AIR PACKAGE	TR-200ED1	SOLAR TRANSFORMER PV FARM EQUIPMENT
A-80000	FUEL CELL	RR-100AD1-NER	NEUTRAL EARTHING RESISTOR
A-85000	BESS	V-63001	AIR RECEIVER
A-50000	WATER TREATMENT PACKAGE	V-64001	NITROGEN RECEIVER
P-50001A/B	SEAWATER LIFT PUMPS	X-99001	CRANE
Q-43004	HYDROGEN VENT		
A-64000	NITROGEN SYSTEM		
V-25001A-F	HYDROGEN STORAGE VESSELS		
V-43001	HYDROGEN VENT KO DRUM		
YLB-079001/2	LIFE RAFTS		
B-100	HV/MV SWITCHROOM 66kV/6.6kV		
B-200	LV SWITCHROOM 400V		
B-300	AC UPS EQUIPMENT ROOM		
B-400	I&T EQUIPMENT ROOM		
TR-100AD1	TRANSFORMER MAIN 66kV/6.6kV		

SYMBOL	DESCRIPTION	QTY.
	UV-IR FLAME DETECTOR (FDZ)	22
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. 02
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. F&G LAYOUTS FOR I&T EQUIPMENT ROOM, AC UPS, LV SWITCH ROOM AND HV/MV SWITCHROOM CONTAINERS LOCATED AT DOOR ENTRANCE OF EACH ROOM (2003) AND START ABANDON.
6. SMOKE DETECTORS (2003) AND POINT SOURCE HYDROGEN DETECTORS (2003) TO BE PROVIDED AROUND HVAC INLET AREAS AND UPON CONFIRMED DETECTION CLOSE DAMPERS TO ROOMS.
7. ULTRASONIC H2 DETECTORS TO BE LOCATED NEAR VALVE ACCESS PLATFORMS FOR H2 STORAGE VESSELS. 02
8. POINT SOURCE H2 DETECTORS TO BE LOCATED ON VALVE ACCESS PLATFORM FOR H2 STORAGE VESSELS.
9. EXACT LOCATION OF F&G DETECTORS AND DEVICES IS SHOWN IN THE 3D MODEL.
10. LOCATION OF THE 6 SENSOR (950GDZ-05101/102/103/104/105/106) AT CEALING ABOVE BESS ROOF, TO AVOID GAS ACCUMULATION AT POCKETS
11. DETECTORS 950GDZ-02117/02118/02119/02120 ARE LOCATED NEAR XV VALVES AT H2 STORAGE VESSEL MANIFOLDS. 02

ELEVATION
FDZ = 2.0m El.
GDZ = 2.5m El. INSIDE THE COTAINER
SDZ = 2.0m El.

12. COMPLETE TAG IS ALWAYS "950-" (I.E. 950MFA-04203 IS 950-MFA-04203)

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-SAF-DL-30027**

REV.:	DATE:	SIGNATURE:
2_E	13/01/25	G.Randi

ROSETTI MARINO SpA

REFERENCE DOCUMENTS

123A90-DDL-PP-DS-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-SAF-RE-30020	FERA REPORT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	23/10/24	ECA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/07/24	MMA	CCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	12/02/24	MMA	CCA	DLO	ISSUE FOR APPROVAL (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

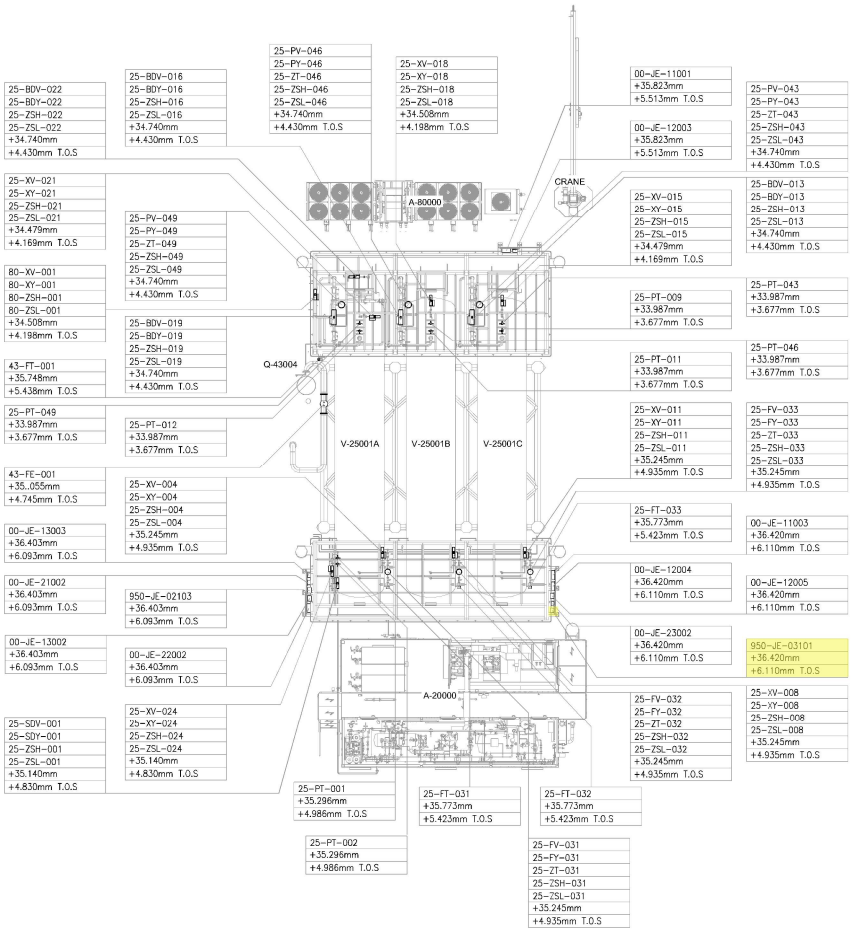
F & G DETECTORS LAYOUT - LOWER & UPPER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 23/10/24
A1	DRAWING NO. 123A90-DDL-SAF-DL-30027	SHEET 001	REV. 02

File Name : 123A90-DDL-SAF-DL-30027 Rev.02

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

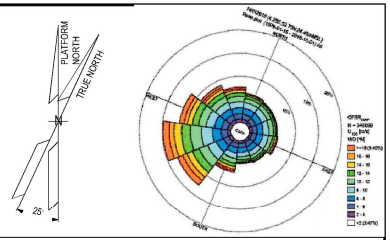
REV. 02



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. 123-A90-DDL-IN-DG-40016

REV. 01

FIELD

INSTRUMENTS

JUNCTION BOX

950-JE-03101

MULTICABLE

No.

I&T EQUIPMENT ROOM (ITER)

MARSHALLING CABINET

~~B400-FGS-002~~

B400-FGS-003

<01>

INSTRUMENTS		JUNCTION BOX 950-JE-03101		MULTICABLE No.	MARSHALLING CABINET ~~B400-FGS-002~~ B400-FGS-003	
		TB-1			TB-950-JE-03101	
950-GDZ-03101 (PWR+, 4-20mA, PWR-)	RD, WH, BK	1, 2, 3	TR1	C-950-GDZ-03101/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TR1 (Shield Bar)	950-GDZ-03101
950-GDZ-03102 (PWR+, 4-20mA, PWR-)	RD, WH, BK	SH, 4, 5, 6	TR2	C-950-GDZ-03102/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TR2 (Shield Bar)	950-GDZ-03102
950-GDZ-03103 (PWR+, 4-20mA, PWR-)	RD, WH, BK	SH, 7, 8, 9	TR3	C-950-GDZ-03103/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TR3 (Shield Bar)	950-GDZ-03103
950-GDZ-03104 (PWR+, 4-20mA, PWR-)	RD, WH, BK	SH, 10, 11, 12	TR4	C-950-GDZ-03104/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TR4 (Shield Bar)	950-GDZ-03104
950-GDZ-03105 (PWR+, 4-20mA, PWR-)	RD, WH, BK	SH, 13, 14, 15	TR5	C-950-GDZ-03105/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TR5 (Shield Bar)	950-GDZ-03105
950-GDZ-03107 (PWR+, 4-20mA, PWR-)	RD, WH, BK	SH, 16, 17, 18	TR6	C-950-GDZ-03107/950-JE-03101 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TR6 (Shield Bar)	950-GDZ-03107
950-GDZ-03108 (PWR+, 4-20mA, PWR-)	RD, WH, BK	SH, 19, 20, 21	TR7	C-950-GDZ-03108/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TR7 (Shield Bar)	950-GDZ-03108
950-GDZ-03109 (PWR+, 4-20mA, PWR-)	RD, WH, BK	SH, 22, 23, 24	TR8	C-950-GDZ-03109/950-JE-031001 3x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS NOTE-2	TR8 (Shield Bar)	950-GDZ-03109
		SH, 25, 26, 27	TR9		TR9 (Shield Bar)	SPARE
		SH, 28, 29, 30	TR10		TR10 (Shield Bar)	SPARE
		SH, 31, 32, 33	TR11		TR11 (Shield Bar)	SPARE
		SH, 34, 35, 36	TR12		TR12 (Shield Bar)	SPARE
		SH, OS		950-JE-03101/B400-FGS-003 ~~950-JE-03101/B400-FGS-002~~ 12x3x2.5mm2,Sh+ShT+ARM,F.Res,ORANGE,NIS	Shield Bar, I.E.	

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_O	08/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT-FGS WIRING DIAGRAMS
950-JE-03101

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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	036	01

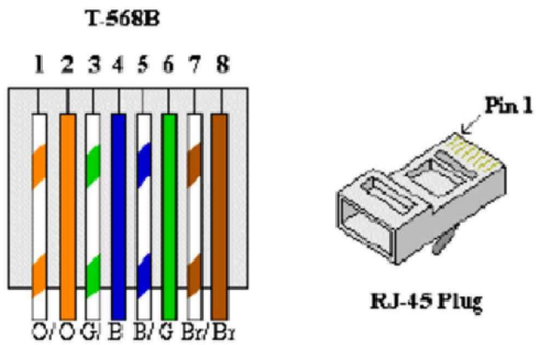
File Name : 123A90-DDL-IN-DG-40016_Rev.01

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:



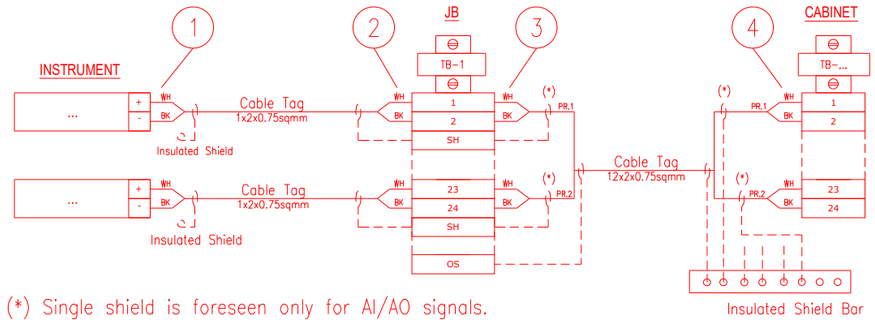
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

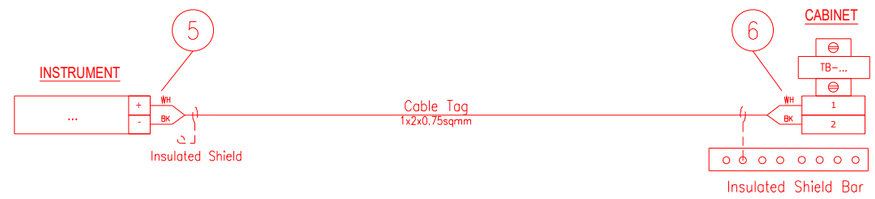
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY 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:

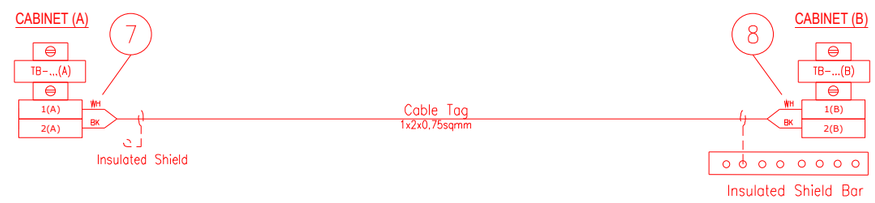
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



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_O	08/01/25	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

	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40015	003	01

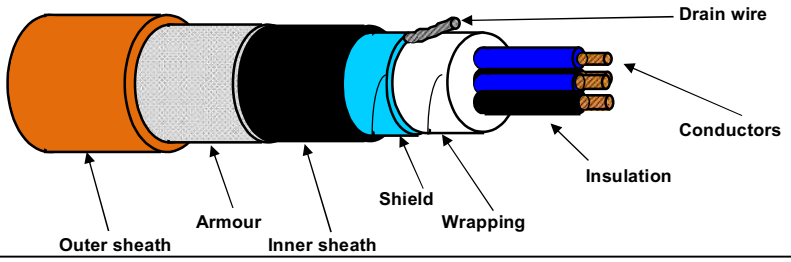
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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-950-GDZ-03105/950-JE-03101	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-GDZ-03105	Gas Detector	Upper Deck		950-JE-03101	AI JB to FGS	Upper Deck	Junction Box	SMICV14-1X3X2,5	Cable Cu CL2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x3x2,5mm² - Orange	M20	T2_M20_Double			T2_M20_Double				U-SEC-14D / U-SEC-14E / U-SEC-14F

FLEI s.r.l.

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X3X2,5 - 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 :	**Red - White - Black**	
Triad Assembling :	Not required	
Triad Wrapping:	Not required	
Drain wire :	Not required	
Triad Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	7/1mt	
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 - 1X3X2,5 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 :	(10,9 ± 10%) mm	
Over armour diameter :	(12,1 ± 10%) mm	
Outer diameter :	(14,7 ± 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 :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 60 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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Section 7 MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE

NOT APPLICABLE

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

NOT APPLICABLE

Section 11 MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE

NOT APPLICABLE

Section 12 FAT / VENDOR REPORTS

NOT APPLICABLE

Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE